School of Arts & Sciences

Student Achievement Newsletter

Number 02 **July 2006**

Dear Colleagues,

Once again we have a spectacular group of student achievements to celebrate. I know that this is just the tip of the iceberg for the ways in which students grow and develop at Westminster, but it's a very impressive list nonetheless. Thank you to everyone who helped bring these stars to our attention.

Mary Jane Chase
Dean, School of Arts and Sciences

PROGRAMS

ANTHROPOLOGY

William McClung was awarded the 2006 Outstanding Student Award in Social Sciences.

Tara Scoggan, Anthropology minor, was accepted into the Master's program in Anthropology with an emphasis in Prehistoric Archeology at the University of Nevada, Reno.

ART

Morgan Herlitzke, a graduating senior from Westminster, was recently featured in the May issue of *Catalyst* Magazine. The cover of the May issue has her painting on it and there is a short bio inside which mentions Westminster and tells about her.

BIOLOGY

Ashlee Allred, Mark Gurling, and **Adam Ware** were awarded the 2006 Outstanding Student Awards in Biology.

Three of Larry Anderson's research students, **Adam Ware, Chari Sorenson,** and **Daniel Perez,** presented a poster at the American Association for the Advancement of Science annual meeting in St. Louis, MO, on February 18th, 2006. The title of their paper is *Adherence To Human Cells and Gene Expression of E. Faecalis*. They presented the poster in the cell and molecular biology portion of the Student Posters.

Ashlee Allred and Dr. Bonnie Baxter designed a website for the Woods Hole Marine Biology Education group. The site can be found at: http://serc.carleton.edu/microbelife/extreme/hypersaline/index.html

Ashlee Allred, Traci Andersen, Stephanie Goshorn, Rylan Larson, and **Harmony Smith** presented at the National Conferences for Undergraduate Research (NCUR) in Asheville, NC, in April 2006. **Ashlee's** project, which she conducted with Dr. Bonnie Baxter, was entitled *Photoprotection in Halophilic Archaea: Correlation of Carotenoids and DNA Damage*. **Traci Anderson** and **Stephanie Goshorn** worked with Dr. Paul Hooker and Dr. Robyn Hyde on their project, entitled *Analyzing the Effect of a Brita Water Filter on the Ion Concentration of Local Water Samples*. **Rylan Larsen's** project, *Characterization of the Artemia thioredoxin reductase gene*, was presented at the NCUR and was awarded a Gore Math/Science Summer Research grant with Dr. Brian Avery. **Harmony Smith's** project was entitled *The Responses of Microglia to Deafferentation in the Adult Zebrafish Olfactory Bulb*, and was conducted with Dr. Judy Rogers.

Kristen Haas and **Christopher Glezos** will conduct Gore Summer Research with Dr. Larry Anderson on their project, *Gene Expression in* E. faecalis *in Distinct Environmental Conditions*. They are interested in the level of gene expression of adherence genes in clinical strains of *E. faecalis*. They propose to use a new and powerful technique called RT-PCR (specifically, real time PCR) to examine gene expression using culture media (simple and complex), urine, and blood. The question they will address is whether gene expression is altered in clinical strains of *E. faecalis* given different environmental conditions, some of which resemble the milieu *in vivo*. Strains grown under these conditions will also be used for adherence assays.

Rhiannon Key and **Benjamin Hansen** were awarded a Gore Math/Science Summer Research grant to work with Dr. Bonnie Baxter on their project entitled *Halophage: Viruses of Great Salt Lake*. Salt-dwelling bacteriophage, or halophage, act as predators of bacterial cells in lakes in which they coexist. Halophage are typically genus- or species-specific and may infect either bacterial or archeal halophiles. Extensive studies on halophage in Australian salt lakes have been done, but nothing has ever been published on viruses from Great Salt Lake. By isolating these halophage via cesium chloride gradient centrifugation, the researchers plan to determine the host species for each virus and examine their genes for similarities to the Australian halophage.

Rylan Larsen will work with Dr. Brian Avery on their Gore Summer Research project, *Characterization of the Artemia thioredoxin reductase gene*. As thioredoxin reductase (TrxR) has been implicated in the detoxification of selenium in a variety of organisms and the gene sequence is so highly conserved among these organisms, the researchers suspect that it may play a role in selenium detoxification in *Artemia* (brine shrimp). Their goal is to identify and characterize the *Artemia* thioredoxin reductase (*Artemia* TrxR) gene and study its regulation in the attempt to provide insights into the response of brine shrimp to selenium in their environment. They will employ Reverse Transcriptase PCR with degenerate primers targeted to conserved sequences in order to isolate the *Artemia* TrxR. Initial PCR results indicated amplification of a potential TrxR fragment, which they will isolate, clone, and sequence this summer. Their final goal is to investigate whether the *Artemia* TrxR gene expression is induced by exposure to selenium.

Tenzin Norgyal will work with Dr. Paul Hooker and Dr. Bonnie Baxter on the Gore Summer Research project *Carotenoid Analysis of Halophilic Bacteria from the GSL*. This will be a continuation of a project that began last

summer to extract, identify, and quantify the carotenoids from halophilic bacteria. Federal funds and the acquisition of an HPLC donated last fall will give the team new capabilities to better analyze samples.

Misty Riddle has been awarded a summer research fellowship from the American Society of Microbiology to work on a joint project with Dr. Brian Avery and Dr. Bonnie Baxter, entitled *Microbial Influence in Great Salt Lake: Classification of Great Salt Lake Microbes Associated with* Artemia Franciscana.

Emily Rohn-Allemen and **Haverley Coy** will conduct Gore Summer Research with Dr. Judy Rogers on their project entitled *Sequencing Avian DNA*. During the summer months of 2006 these students will extract, amplify, purify and sequence several sections of avian DNA, specifically owls and ravens. Preliminary work has begun and will continue on these two groups over the summer. The researchers are specifically looking at the 16S ribosomal subunit segment. The students have developed the appropriate primers and will learn to use the new sequencing equipment.

Rory Sandberg was awarded a Gore Math/Science Summer Research Grant to work with Dr. Bonnie Baxter on their project, *Searching for an Alternative Energy Source*. Great Salt Lake seems to be an ideal environment for the hydrogenase (enzyme that produces Hydrogen) gene to present itself. Great Salt Lake has approximately double the salt concentrations which results in less than half the dissolved oxygen of those lakes studied by other researchers, making it an ideal location for organisms which produce hydrogen. The researchers will search for such genes in cultured algae species from the lake as well as mixed samples. They will first determine if the gene exists at all, and then will begin isolating the organism from which it came.

CHEMISTRY

2005 Chemistry graduate **Ashley Phillips** coauthored an article with Westminster's Dr. Tricia Shepherd and University of Kansas's Javier Gomez and Ward Thompson. The article, *Conformational Free Energies of 1,2-Dichloroethane in Nanoconfined Methanol*, was published in the September 22, 2005, edition of the *Journal of Physical Chemistry B*.

Chemistry majors **Thomas Jerant** and **Hassan Hassan** (a McNair Scholar) and math major **Rory Sandberg** each gave a brief oral summary and a poster presentation of their Summer 2005 research projects at the 4th annual MERCURY conference in undergraduate computational chemistry in Clinton, NY, July 27-July 29, 2005.

Timothy Harden was awarded a Gore Math/Science Summer Research Grant to work with Dr. Tricia Shepherd on their project, *MD and MC simulations of single-stranded PNA*. They will assess the efficiency and accuracy of the Molecular Dynamics and Monte Carlo theoretical methods in characterizing the conformations and dynamics of Peptide nucleic acid (PNA).

Tommy Mitchell, a Chemistry major, has been accepted into the ACS Summer Nuclear School in San Jose. This is limited to 24 students each year, and only three students from Utah have been accepted in the past 10 years.

Cindy Spangler, also a Chemistry major, was accepted to the NASA Undergraduate Summer Research program in White Sands, New Mexico, for which she was also awarded a $5000 stipend.

Patricia Wayment will conduct summer research with Dr. Robyn Hyde on a project

entitled *Synthesis of West Nile Virus Inhibitor*. The project focuses on whether ribonucleic acid homopolymers with modified bases, which inhibit the activity of Reverse Transcriptase (RT) in HIV, might also be used to inhibit viral replication of the West Nile Virus in the body.

COMMUNICATION

Lisa Nyren, Adelaide Ryder , and **Emma Ryder** were awarded the 2006 Outstanding Student Awards for Communications.

Lindsie Smith and **Brian Scott Clark**, MPC students, presented at the 27th Annual Meeting of the SW/TX PCA/ACA, sponsored by the Southwest/Texas Popular Culture Association/American Culture Association, on February 8-11, 2006. Lindsie's presented paper was entitled *Jessica Simpson is a Comic Genius? Gender Stereotypes, Post Feminism, and the Comedy of Lucille Ball*. Brian Scott Clark presented his paper, *Law Abiding Outlaws: A Rhetorical Analysis of Bikers Against Child Abuse*.

COMPUTER SCIENCE

Michael Wallstedt was awarded the 2006 Outstanding Student Award for Computer Science.

ENGLISH

Heather Brown and **Emily Miller** were awarded the 2006 Outstanding Student Awards for English.

Tim Asay, who graduated in 2005, was just accepted to the graduate program in English at University of Oregon.

Miles Fuller won the Academy of American Poets Prize, judged by Erin Moure.

Ellipsis accepted 2.5% of its submissions, expertly edited by **Trisina Dickerson, Stephanie Petersen, Miles Fuller**, and **Anna Hansen**. *Ellipsis* is also now a member of the Council of Literary Magazines and Presses.

ENVIRONMENTAL STUDIES

Ed Conrad was awarded the 2006 Outstanding Student Award for Environmental Studies.

GENDER STUDIES

Emily Brown was awarded the 2006 Outstanding Student Award for Gender Studies.

GEOLOGY

In November 2005, student **Chris Davis** joined alumna Elisha Hughes and professor David Goldsmith at the annual meeting of the Geological Society of America. While there, they made a presentation entitled *Digital Reconstruction of Fossilized Organisms from Serial Image Data*, showcasing their summer research of the past two years.

HISTORY

Marci Muhlestein Clark was awarded the 2006 Outstanding Student Award for History.

HONORS

Three students were awarded Honors Program Independent Summer Research Grants for Summer 2006. They were selected by a competitive grant submission process. **Breanne Eddington's** project is entitled *Life in a Salt Crystal: Reviving Desiccated Microorganisms from the North Arm of Great Salt*

Lake. **Amberlyn Peterson's** project is *Free Energy Analysis of PNA·DNA Nucleotide Mismatches*. Finally, **Marie Robinson** was awarded a grant for her project, entitled *Mind Her or Mine Her? The Implications of Feminizing Nature*.

Heather Brown presented her paper on 20th century Italian women's literature—sponsored originally as an Honors Independent Summer Research Grant project—at the National Undergraduate Literature Conference at Weber State University as well as at the "InterDisciplining the Body" Graduate Student Conference at Florida State University on April 8.

Amy Burns served an internship in Congressman Matheson's office during spring semester.

Alana Dela Cruz is studying Spanish Language and Culture at the Centro de Lenguas Modernas at the Universidad de Granada in Spain.

Meghan Hamilton has been doing research with principle investigator Ray Kesner, Ph.D., and has accepted a paid research position at the University of Utah studying addiction.

Alisha Panunzio completed an internship with PriceWaterhouseCoopers as an auditor.

Casey Rasch was honored as Westminster's 2006 Outstanding Student Humanitarian by the Utah Campus Compact at their Statewide Recognition event on April 4, 2006.

Lahdan Saeed has been working at Anzen Bio to develop a test to rapidly identify Tuberculosis. She has presented her work to the Rocky Mountain Pus Club and will present at the International Association of Food Protection in Calgary.

Sara Vandermolen has become the "youngest ever" General Director for Zivio, a non-profit semi-professional community Balkan dance troupe.

Honors Student Writing Awards (2005-06)
Best Papers of the Year in Honors Seminars

Category 1 (Humanities):
Heather Hicks: *Dante's Inferno: A Christianized Version of Aristotle's Model for Human Flourishing*

Blakely Neilsen: *The Clash of Rousseau and Nietzsche*

Category 2 (Sciences):
Ray Bradford: *Moral Responsibility in a Deterministic Universe*

Category 3 (Social Sciences):
Heather Brown: *Gigantic Insects: Marxian Alienation and Dehumanization in Kafka and Melville*

Best Paper Overall:
Ray Bradford: *Moral Responsibility in a Deterministic Universe*

LANGUAGES

Adam Coon was awarded the 2006 Outstanding Student Award for Spanish.

Megan Nelson was awarded the 2006 Outstanding Student Award for French.

MATHEMATICS

Mayo Miller and **Kiersten Myers** received the 2006 Outstanding Student Awards in Mathematics.

Casey Rasch received the 2006 Outstanding Service Award for Mathematics.

Chris Davis achieved the high score on the Putnam Exam.

Chris Davis also received a Gore Music/Science Summer Research Grant to work on his project with Dr. Richard Wellman, entitled *Ray Tracing in Four Dimensions*. Their study will attempt to generalize ray tracing in greater than three dimensions, based on the mathematics underlying and computer software implementing ray tracing in three dimensions. Chris and Dr. Wellman intend to present their findings at the joint meetings of the AMS and MAA in New Orleans, January 2007.

MCNAIR STUDENTS

Westminster College June 2006 Graduates:

Mario Castillo, a Sociology minor, will attend the University of California at Berkeley, where he will pursue a Ph.D. in Sociology.

Daniel Perez will attend Medical School at the University of California, San Francisco.

Kasey Serdar will attend Virginia Commonwealth University where she will pursue a Ph.D. in Counseling Psychology.

Tammy Villa-Humphries (2004) will attend the University of Utah where she will pursue a Master's in the Department of Education, Culture, and Society.

University of Utah May 2006 Graduates:

James Garang will attend the University of Massachusetts, Amherst, where he will pursue a Ph.D. in Economics.

Augustino Mayai will attend the University of Wisconsin, Madison, where he will pursue a Ph.D. in Sociology.

Jaymes Myers will attend the University of Utah, where he will pursue his Master's Degree in Communications.

Koa Perlac will attend UCLA Law School.

Joshua Plant was awarded a graduate fellowship to perform research at the National Institutes of Health in Bethesda, MD.

Nakita Swanigan will attend the University of Utah where she will pursue a Master's in the department of Education, Culture, and Society.

MUSIC

Asha Despain (Nursing major) and **Brett Moore** (International Business major) received awards in a major statewide singing competition. Asha placed first and Brett placed third in the NATS (National Association of Teachers of Singing) competition which took place on February 4th at the University of Utah. It is remarkable that Asha and Brett competed against singers, including many music majors, from throughout the state and took top honors. Both singers can be heard performing solos on a regular basis with the Chamber Singers.

PHILOSOPHY

Mario Castillo was awarded the 2006 Outstanding Student Award for Philosophy.

Selected to membership in PHI SIGMA TAU (the international undergraduate Philosophy honor society), **Mario Castillo** will attend UC-Berkeley to pursue a Ph.D. in Sociology. UC-Berkeley awarded Mario the Chancellor's Humanity Fellowship to support his pursuit of the Ph.D.

Jeremy Salim Sheikh, undergraduate major in Philosophy, has been accepted to participate in the Undergraduate Summer Institute for Diversity in Philosophy, hosted by the Department of Philosophy of Rutgers University (the State University of New Jersey). Jeremy is one of 15 students selected in a nationwide competitive application process. The Institute offers Jeremy a stipend for the week that the Institute meets, and covers travel costs and room and board for the duration of the Institute.

PHYSICS

Todd Johansen and **Mayo Miller** were awarded the 2006 Outstanding Student Awards for Physics.

Ryker Baily (Pres.)**, Todd Johansen, Mayo Miller, Ed Solak,** and **Orion Nash** were instrumental in Westminster College's chapter of the Society of Physics Students having been selected as an Outstanding SPS Chapter for the 2004-2005 school year. This award is given to less than 10% of the chapters nationwide.

Amy Rogers was awarded a Gore Math/Science Summer Research Grant to work with Dr. Peter Conwell on a project entitled *The Evolvability of Totally Connected, Recurrent, Neural-like, Networks near a Phase Transition***.** In previous work, they made the novel discovery that phase transitions exist in totally connected, recurrent, neural networks. They speculate that networks are most evolvable near these phase transitions, and will test this hypothesis by conducting empirical studies of ensembles of randomly connected networks with various weight biases.

Edwin Solak will also conduct Gore Summer Research with Dr. Peter Conwell. In their project *Phase Transitions in a Totally Connected Recurrent Network Due to Connection Weight Bias*, they will perform an empirical study of ensembles of neural networks running on multiple computers. They have found preliminary evidence for phase transitions in recurrent neural networks due to connection weight bias. The implication is that active networks require certain types of connection weights, and they want to thoroughly investigate these transitions.

POLITICAL SCIENCE

Lesley Manley was awarded the 2006 Outstanding Student Award in Political Science.

PSYCHOLOGY

Ashlee Allred, Rebecca Bailey, Nicki Kasteler, and **Kasey Sedar** received 2006 Outstanding Student Awards in Psychology.

Ashlee Allred was accepted to the University of Connecticut for a Ph.D. in Neuroscience.

Camille Barraclough will pursue her Ph.D. in School Psychology at the University of Montana.

Jennifer Day was awarded a research position at the National Institutes of Health.

Brittany Ennis was accepted to 6 of 8 schools to which she applied and chose to attend the University of Utah Law School.

Jaime Housekeeper moves on to attend Pacific University for a Psy.D. in Psychology.

Kasey Serdar was accepted at multiple graduate schools and has chosen to attend Virginia Commonwealth University for a Ph.D. in Counseling Psychology.

Megan Terry will attend Texas A&M for a Ph.D. in School Psychology.

Phuong Vu was selected to receive Jury's Choice honors by the reviewers for the 2006 Utah Service Symposium. Phuong was presented the award at the 2006 "Artivism" event on March 23, 2006.

Lauren White ('04 grad) completed her MS in Psychology at U of Oregon and will start a Ph.D. program at U of Maryland researching infant brain development. She also received a prestigious NIMH training grant to fund her doctoral program.

SOCIOLOGY

Michelle Beckstrand was awarded the 2006 Outstanding Student Award in Sociology.

Daniel Compton was accepted into the Master's program in Library Science at the University of North Texas.

Kirsty McLaren, Jamee Roberts, and **Jamie Kalikakis** presented papers at the Pacific Sociological Association Annual Conference in Los Angeles. Kirsty's paper was titled *Masculine Identities and Pop Sensibilities: Hollywood's Depiction of Gender Roles*. Jamee's paper was titled *What We Want to Believe: Society's Reaction to Deviance and Sexual Offender Treatment Efficacy*. Jamie's paper was titled *Blood and Guts: The Subculture of Women and Tattooing*.