Please read all instructions and regulations on the reverse side of this sheet prior to the completion of this form. The 8 copies of your proposal are due in the Dean's Office on the 2nd Friday of the Block by 1:00 p.m. If you have questions, please contact Rita Zook at x6686 or email rzook@coloradocollege.edu.

DATE SUBMITTED 02-23-10

NAME ________________________ CLASS ____ WORNER BOX_______ EXT. __________

ID # ________________________ HOMETOWN (Not Address) ________________________

NAME ________________________ CLASS ____ WORNER BOX_______ EXT. __________

ID # ________________________ HOMETOWN (Not Address) ________________________

STUDENT RESEARCH ________ LIFE OF THE MIND _________ CONFERENCE ______

PROJECT TITLE
Presentation of Professional Poster at the Annual Meeting of the American Association of Physical Anthropologists (AAPA)

BRIEF DESCRIPTION OF INTENDED USE OF FUNDS
I will be using the funds to cover travel, lodging, and food expenses while in Albuquerque at the AAPA conference, where I will be presenting two academic posters.

PROPOSED DATE/BLOCK OF USE April 14 - 17, 2010

NAME OF FACULTY SPONSOR Christina Torres-Rouff

HAVE YOU BEEN THE RECIPIENT OF A PREVIOUS VENTURE GRANT Yes / No

IF SO, WHAT AMOUNT? $1000 WHEN? Summer 2008 REPORT SUBMITTED? Yes

TOTAL AMOUNT OF VENTURE FUNDS NOW REQUESTED $850.00

ARE YOU SEEKING OTHER FUNDING FOR THIS PROPOSAL? Yes / No

IF YES, WHAT IS THE SOURCE? All other funding will be from personal funds.

If this proposal is approved, I understand that it is my responsibility to notify the Dean's Office immediately if I do not pursue my project as proposed to the Dean's Advisory Committee. I further understand that all funds are to be used according to the proposal as submitted and approved by the Dean's Advisory Committee. Any changes to an approved project must be submitted to the Chair of the Committee for approval. Please note: the IRS requires that we report Venture Funds as taxable income.

SIGNATURE ________________________ DATE 02-23-10 Approved
For the past two summers, I have been fortunate to conduct bioarchaeological research in San Pedro de Atacama, Chile with Dr. Torres-Rouff, thanks to the generous support of the Venture Grant and Faculty Student Collaborative Grant. Dr. Torres-Rouff and I recently had the honor of being accepted to present our research at the annual meeting of the American Association of Physical Anthropologists (AAPA), the premier national meeting for scholars in my field this spring. I also was part of a presentation (Preliminary analyses of dental health in Middle Horizon (AD 500-1000) San Pedro de Atacama, northern Chile) at the same conference last year. This year I am first author on a presentation that includes a portion of my senior thesis research as well as co-author on a piece by our student colleagues at Arizona State University.

I am applying for Venture Grant funds so that I can attend the AAPA in Albuquerque this April and present two scientific posters. The poster on which I am first author is entitled “The Solcor Ayllu: Exploring variation in biological and cultural elements from contemporary cemeteries in pre-Columbian North Chile.” The poster and presentation will discuss our analyses of biological and cultural variation in 199 individuals. We collected this data while in Chile and have since analyzed it here at Colorado College. We studied stable isotope values, discrete traits, cranial vault modification, and burial contexts from two cemeteries within the Solcor Ayllu—Solcor 3 and Solcor Plaza. The second poster I will be presenting is in collaboration with graduate students at Arizona State University and is entitled “Isotopic analysis of diet and residential mobility at San Pedro de Atacama Chile: Understanding the Tiwanaku phenomenon through patterns of local social organization in the Solcor ayllu.” In this poster we are exploring our bioarchaeological results in light of new data derived from Strontium isotopic analyses conducted by the ASU students. The abstracts for both of these posters are attached below.

Attending the conference will not only be an opportunity to present my work and educate other students and researchers about our findings, but a chance to engage with the larger anthropological community. Through conversations during our poster presentation I will be able to meet others interested in the same research areas. Most importantly, I will be able to meet and discuss my interests with professors from graduate programs I am considering as well as other researchers who can help me in my ultimate goal of attending a graduate program in biological anthropology. The contacts I made last year at the conference have been invaluable in my research this year and I believe that solidifying those relationships and building new ones would benefit me greatly. Presenting at a conference such as this is a prestigious opportunity, both for myself and for the Colorado College Anthropology Department. As the largest and most prestigious conference for bioarchaeologists, this conference presents me with a unique opportunity to learn about the newest developments in this field. Finally, I will be able to represent Colorado College and the Anthropology Department as a member of this community.

The conference will be held in Albuquerque from April 14 through April 17, 2010. I am requesting funds to allow me to participate in this great opportunity by covering my expenses while I am at the meeting. I am requesting $850.00 for airfare, lodging, food, and ground transportation.
Itinerary:

April 14, 2010: Arrive in Albuquerque at 12:15 pm via United flight 7669 (flight is from Chicago, where I will be taking a CC class block 7)
April 15, 2010-April 16, 2010: Conference days. Conference sessions 8:00 am-5:00 pm.
April 17, 2010: Leave Albuquerque at 11:53 am via United flight 6266 to return to Colorado

BUDGET:

Airfare to Albuquerque $240.00 (see proposed itinerary)
Ground Transportation $75.00
Food ($ per day for 4 days) $50.00 (Total for 4 days= $200)
Lodging ($ per night for 3 nights) $118.00 (Total for 3 nights = $354)
Conference Fee $130.00

TOTAL: $999.00

Total Requested from Venture Funds: $850.00
Complex polities exert influence through the movement of goods and individuals. Although the nature of the interaction between the Tiwanaku state (AD 500-1000) and San Pedro de Atacama is unclear, we argue that it encompassed both biological and cultural spheres. To elucidate this, we collected data on stable isotope values, discrete traits, cranial modification, and the mortuary context from two contemporary cemeteries in the Solor ayllu (Solor-3: n=122 and Solor Plaza: n=77).

Strontium and oxygen isotope analyses revealed 20 individuals with values outside the local range as determined through faunal signatures, including some potential altiplano migrants. Biodistance analyses show no significant difference between the two Solor populations, while they are both significantly different from the contemporary Solor 3 cemetery. Together, these suggest that foreign influence may have included human mobility.

Patterns of cranial modification are distinct from those seen in other periods with a much higher incidence of annular forms. Interestingly, these data do not seem to coincide with the presence of Tiwanaku objects. Of the 19 foreign objects, only five Tiwanaku and one southern Bolivian object were found with individuals whose isotope values suggest they might have spent time away from the oases. None of these individuals display the annular shape that is affiliated with outside groups. Consideration of these multiple lines of evidence suggests that Tiwanaku's influence in the Atacama was multifaceted instead of a monolithic force and, moreover, that their impact affected not only the cultural practices of this group, but may have altered its composition.

This study was funded by generous grants from the NSF (BCS-0721229 and BCS-0721388) the School of Human Evolution and Social Change at Arizona State University, and the Venture and Jones Funds at Colorado College.
Isotopic analysis of diet and residential mobility at San Pedro de Atacama, Chile: understanding the Tiwanaku phenomenon through patterns of local social organization in the Solcor ayllu.

Studies of local social organization and differentiation in peripheral areas enrich understanding of the internal composition of expansive polities. Here, we investigate local processes of immigration and social differentiation within a peripheral area of the Tiwanaku polity of the Andean Middle Horizon using isotopic indicators of residential mobility and diet in the tooth enamel and bone of 40 individuals from the Solcor-3 and Solcor Plaza cemeteries of San Pedro de Atacama, Chile.

Consistent with the hypothesis that common identification with the Tiwanaku core would have facilitated migration between San Pedro and different areas in the Tiwanaku polity, oxygen and strontium isotope analyses indicate that both local individuals and first-generation migrants were present within these cemeteries. Five individuals display \( \delta^{18}O \) or \( ^{87}Sr/^{86}Sr \) values outside the local range and appear to have originated from two or more separate geographical areas. These results suggest more extensive immigration into San Pedro than previously identified, potentially due to interregional trade and contacts during Tiwanaku expansion. Contrary to expectations that dietary variability within San Pedro may have resulted from different geographic identities as well as from variation in individual affiliation with Tiwanaku, carbon isotope data suggest a largely homogeneous diet among local residents. Cranial modification data show the exclusive use of tabular forms—the local variant—among the potential migrants despite the high incidence of annular forms within these cemeteries (Solcor-3: 19.5%; Solcor Plaza: 26.7%). Interestingly, none of the individuals with non-local values have Tiwanaku objects, despite their presence elsewhere in these cemeteries.

This study was funded by the National Science Foundation (BCS-0721229 and BCS-0721388), the School of Human Evolution and Social Change at Arizona State University, and Colorado College Venture Grant and Jones Funds.