

College of Education and Professional Studies



Professional Colloquium 2006

Table of Contents

- A. Intent of the Colloquium
- B. Newly Promoted Professor Presenters:
 - 1. Oral Presentation: Professors Dale Wilson, Joan Amby and William Bender
- C. Poster Presentations by CEPS Faculty
 - 1. E.A. Bergman, PhD, RD, FADA; E.R. Smith; S.E. Walsh; N.S. Buerger, MS, RD; T.F. Englund, PhD; Central Washington University, Ellensburg, WA. **Elementary school students eat more at 12:30 PM than at 11:30 AM in a school lunch setting.**
 - 2. DePaepe, J, Professor, Department; Lambert, C., Associate Dean, College of Education and Professional Studies; Curran, C., Associate Professor, Department of Education; Weiner, C., Assistant Professor, Department of Education; Shorr, D., Professor, Chair, Department of Education. **Assessing Teacher Candidate Dispositions: A Validation Study.**
 - 3. Susan Donohoe, PhD., Professor of Education (perhaps with help from Yoko Kodama, Shiori Notsu, and Chizu Takahashi). **Exchange Professorship of CWU to Shimane Women's College: Educational Experiences, A Diagnosis/Prescriptive Approach.**
 - 4. C.H. Johnson, CWU, 400 University Way, Ellensburg, WA 98926-7584, USA, cjohnson@cwu.edu, E.A. Druschitz, UM Rolla, 1870 Miner Circle, Rolla MO 65409, USA, edruschitz@gmail.com. A.P. Drusschitz, Internet Tech. Ctr., 939 Airport Rd., Lynchburg, VA 24502, USA, ADruschitz@internet.com. **Ultrasonic Leak Test for Automotive Caliper.**
 - 5. C.H. Johnson, J. Fuerte*, J. Protzeller, Central Washington University, *student. **Program Synergy: Engineering Labs Using Foundry Recourses.**
 - 6. Robert Lupton, Associate Professor of Retail Management and Technology, David Rawlinson, Assistant Professor of Information Technology, Lori Braunstein, Professor of Information Technology, Kathie Riker, Anhui Agricultural University (Anhui Nong Ye Daxue), Hefei, Anhui Province, China; **Private Label Branding: A Cross-National Study Looking At Chinese and American Beliefs and Perceptions.**
 - 7. David R. Rawlinson, J.D., Assistant Professor of Information Technology, 509.963.2611, rawlinsd@cwu.edu. Robert A. Lupton, PhD., Associate Professor of Retail Management and Technology. **Wireless Canopy as an Agent for Economic Recovery of a Downtown Area: A Case Study.**
 - 8. David R. Rawlinson, J.D., Assistant Professor of Information Technology, 509.963.2611, rawlinsd@cwu.edu. Robert A. Lupton, PhD., Associate Professor of Retail Management and Technology. **Attitudes, Perceptions, and Tendencies Toward Software Piracy: A Comparative Study of United States and Slovakian Students.**
 - 9. Natalie Lupton, Lecturer, Information Technology and Administrative Management. **Podcasting: CEPS Takes the Lead!**
 - 10. Sloan, T.A., Associate Professor of Flight Technology. **Improving Recruitment and Retention of Native American Students in the Flight Technology Program.**

11. Hoover, A.L., Assistant Professor of Flight Technology, Central Washington University and Bender, W.J. Associate Professor of Construction Management, Central Washington University, Coonrod, L.S. Flight Technology Student, Central Washington University. **Aviation, Construction and Engineering Career Academy for Young Women.**
12. Hoover, A.L., Assistant Professor of Flight Technology Central Washington University. **Effect of Concurrent Task Management Training on Single Pilot Task Prioritization Performance.**
13. Twaddle, B., Graduate Assistant, Central Washington University; Papadopoulos, C., Assistant Professor of Exercise Science, Central Washington University. **Influence of the “Built” Environment of Physical Activity of Adults in a Small Rural Community.**
14. Garver, M.J., Graduate Student HHRP, Central Washington University; Nielsen, L.J., Graduate Student HHRP, Central Washington University; Dickinson, J.M., Graduate HHRP, Central Washington University; Campbell, D.S., Graduate Student HHRP, Central Washington University; Papadopoulos, C., Assistant Professor of Exercise Science, Central Washington University. **Effect of Storage Techniques on Blood Lactate Concentration and Determination of Various Lactate Threshold Definitions.**
15. Nielsen, L.J., M.J. Garver, J.M. Dickinson, D.S. Campbell, C. Papadopoulos, Central Washington University, Ellensburg, WA. Email: nielsenl@cwu.edu. **Physiological and Metabolic Responses During Two Self-Selected Cycling Time Trials.**

Intent of the CEPS Professional Colloquium

The Professional Colloquium was initiated in 2003 to honor recently promoted professors in the College of Education and Professional Studies. The Colloquium is intended to provide an avenue for professors to share their areas of interest and scholarly activities with the Central Washington University community.

In addition, the intent of the Colloquium is to encourage dialog and collaboration among CWU faculty related to scholarship. To initiate this dialog, all CEPS faculty are encouraged to share recently conducted and presented activities in poster format at the Colloquium.

We hope that the professional colloquium informs you concerning the scholarship that is happening in the College of Education and Professional Studies.

TITLE:

Elementary school students eat more at 12:30 PM than at 11:30 AM in a school lunch setting.

AUTHOR(s):

E.A. Bergman, PhD, RD, FADA; E.R.Smith; S.E.Walsh; N.S.Buergel, MS, RD; T.F.Englund, PhD; Central Washington University, Ellensburg, WA.

LEARNING OUTCOME:

To understand the impact that school lunch service time has on the amount of food wasted and consumed when served to elementary school students.

TEXT:

The purpose of this study was to determine the impact that lunch service start time had on plate waste and nutrient consumption for elementary students. Plate waste data were collected for 20 days to determine the amount of food consumed and wasted. The amount of energy and several nutrients consumed were analyzed by subtracting the amount of each food item left on the lunch tray from the amount of that food item initially offered. Significant differences in plate waste and nutrient intake were determined using analysis of variance. The combined female and male means in fourth and fifth graders showed that lunch served at 12:30 PM versus 11:30 AM resulted in more total grams of food consumed (351 vs. 310 grams, $p<0.0001$), and less food wasted (211 vs. 252 grams, $p<0.0001$). In addition, energy and virtually all nutrients monitored were consumed at a higher rate during the later lunch period. These included more calories (479 versus 401, $p<0.0001$), protein (22 versus 18 grams, $p<0.0001$), carbohydrate (63 versus 51 grams, $p<0.0001$), fat (16 versus 14 grams, $p<0.0001$), Vitamin A (224 versus 163 μg , $p<0.0001$), iron (2.8 versus 2.3 mg, $p<0.0001$), and calcium (263 versus 245 mg, $p<0.05$). Results from this study may be used to influence administrators to schedule lunches during the appropriate time of day to ensure that children consume an adequate lunch. Additional studies are needed to determine the best time for lunch service in the elementary setting in order to enhance learning in the morning and in the afternoon.

FUNDING DISCLOSURE:

This publication has been produced with funding by the National Food Service Management Institute Applied Research Division, located at The University of Southern Mississippi with headquarters at The University of Mississippi. Funding for the Institute has been provided with Federal funds from the U.S. Department of Agriculture, Food and Nutrition Services, and The University of Mississippi. The contents of this publication do not necessarily reflect the views or policies of The University of Mississippi or the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

ASSESSING TEACHER CANDIDATE DISPOSITIONS: A VALIDATION STUDY

DePaepe, J, Professor, Department of Education
Lambert, C., Associate Dean, College of Ed. & Prof. Studies
Curran, C., Associate Professor, Department of Education
Weiner, C., Assistant Professor, Department of Education
Shorr, D., Professor, Chair, Department of Education

Abstract:

Research has demonstrated that beliefs and attitudes of teachers do affect how teachers teach (Knowles, 1992; 1994; Knowles & Holt- Reynolds, 1994). Therefore, it is imperative that preparation programs, whether seeking accreditation or not, know candidate dispositions. Because past experiences and cultural background (Clark, 1992) are inextricably linked to dispositions and known to affect how teachers teach, it is important to examine them systematically as candidates move through teacher preparation programs. The purpose of this study was to design a valid and reliable instrument, which would determine candidates' beliefs and attitudes (dispositions) from admission to the teacher preparation program through graduation. The study was conducted using beginning and ending teacher candidates (N=240). Data analysis demonstrated that ending candidates scored significantly better ($p < .01$) than the newly admitted candidates. Item analyses of the questions show an internal consistency of .90. The resultant data proved that the faculty were preparing candidates consistent with values and beliefs of their conceptual framework.

EXCHANGE PROFESSORSHIP OF CWU TO SHIMANE WOMEN'S COLLEGE:
EDUCATIONAL EXPERIENCES, A DIAGNOSIS/PRESCRIPTIVE APPROACH.

Authors: SUSAN DONAHOE, Ph.D., PROFESSOR OF EDUCATION (perhaps with help from Yoko Kodama, Shiori Notsu, and Chizu Takahashi)

Abstract:

Objective(s): To show improvements in what students know and can do using written and spoken American English. In composition classes, to show an improvement in writing with fewer errors and better content in a one page statement from the first day of class to the final day of class. In conversation classes, to show an improvement in speaking in complete sentences with better pronunciation and syntax.

Design: Pre-test and evaluation, 16 weeks of instruction and practice, Post-test and evaluation. The prompts for the writing will be minimal, simple requests for their experiences both pre and post. Dictionaries and electronic word power units will be allowed but no further discussion by the instructor or among peers.

Subjects/Setting: Japanese young women in their first or second year of junior college at Shimane Women*s College, only those students who pass an entrance exam with the exception of an unusual circumstance such as one student*s blindness. All the students have had English language study, K-12, but come from many diverse public schools. The location is in Matsue, Shimane Prefecture in western Japan on the coast of the Sea of Japan. Considered a rather small town, it is surrounded by agriculture. There are historical draws, including a castle, lake, archeological sites, a silver mine, but they have not been exploited by tourists or commercialism.

Statistical Analysis: For the composition classes, I will simply score the writing using the same rubric and analyze the mean of the pre and the post-writings to see if there is improvement. For the conversation classes, I will take notes on pre-class and post-class questions to each student and use the same rubric to score pronunciation and syntax. In both cases, I am expecting the mean scores to improve.

Results: There are increases in the mean scores of the pre-class and post-class evaluations and rubrics.

Applications/Conclusions: There are a number of styles being taught here. Some professors speak Japanese most of the class time and give little homework. Others use the immersion system and only use American English or British English and give little homework. The method above was using American English most of the time, 75% or more, a little Japanese and also allowing group discussion in Japanese, and giving homework every day in composition and practice assignments for conversation in American English. First, research needs to be done to see if all the styles are effective and then to compare those that are effective to see if one method exceeds others. Some of the instructors have no college degrees and little understanding of pedagogy; others work very hard to find what is best for these particular students. Much more research is needed.

Ultrasonic Leak Test for Automotive Brake Caliper

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Keywords: Leak Path Defect, Ultrasonic Detector, Caliper Casting, Capstone Course .

Abstract. Leak path defects in brake caliper castings were observed and an efficient method of detecting them was needed. The standard detection technique used a differential decay method at pressures up to 1000 psi but this technique could not detect all of the leak path defects. The only known method that could detect all of the leak path defects was a technique that used brake fluid, and required pressures up to 3,000 psi. Because a fluid medium used to conduct this test, regulations precluded the calipers from being used on a vehicle after the inspection process. This was the motivation for a Capstone Project in the Mechanical Engineering Technology Program at Central Washington University.

For safety and economic reasons, a nondestructive test which utilized acoustics was chosen. It was decided that the main focus for this project would be the design of the fixture. The prototype fixture was designed to utilize a toggle clamp and a backing plate (manifold) with O-rings. The clamping system was produced at INTERMET Corporation. After the fixture was completed it was sent to Central Washington University. To verify predictions, strain gauges were used at different parts of the system during normal use. Then the placement of the acoustic listener was determined, completing the test fixture.

In order to obtain a good seal (O-ring to cavity lip) the fixture required deflections less than .0045" (as determined by tolerance stacking and O-ring deformation requirements). A magnetic pin gauge was used to measure this displacement as it the fixture was pressurized to 82psi (available shop pressure). To demonstrate the safety of the device, a strain gauge was mounted on the backing plate to measure the force being counteracted by the toggle clamp. The maximum stress on the backing plate was approximately 10% of the material's yield strength (~ 36 ksi for A36 steel); producing a safety factor of about 10. No more than 3750 psi was measured. The maximum strain of the backing plate was 0.003 in/in. Upon completion, the fixture was sent back to INTERMET Corporation where a production model was designed and implemented.

C.H. Johnson, J. Fuente*, J. Protezeller, Central Washington University, *student. **Program Synergy: Engineering Labs Using Foundry Resources.**

Abstract

Materials Programs have followed trends in cost reduction by closing foundries and other expensive facilities. They have also oriented curricula to popular topics such as composites and MEMS. When partnered with other disciplines, materials, curricula are even further pressured to effectively match resources to that discipline's vision.

At Central Washington University, Cast Metals is part of the Industrial Technology Program, and has some shared courses with Mechanical Engineering Technology (MET). With support from the Foundry Educational Foundation, and a majority of students from the MET Program, the foundry is a small but viable resource. In an attempt to utilize this resource more, it was decided to use the foundry to support MET labs. One example is the use of SOLIDCast in a Heat Transfer Lab.

The MET Program has outcomes which stress conceptual and applied knowledge and skills. Experiments exist that guide students through predictions and experimental verification of simple transient heat conduction. Numerical analysis enables a greater depth and realism in this process. Instead of a prediction of temperature at a point, gradients can be discussed, illustrated and applied. At a cost of a few hundred dollars per year, a basic solidification tool can support a core MET course. Students showed a great interest in the software, and the use of the software increased. This addressed specific program outcomes. Lab reports (the most relevant evidence) had greater scope as measured by a created metric. An added benefit was an increased use of foundry and interaction between the programs.

PRIVATE LABEL BRANDING: A CROSS-NATIONAL STUDY LOOKING AT CHINESE AND
AMERICAN BELIEFS AND PERCEPTIONS

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ABSTRACT

Private label products have enjoyed market expansion in the U.S. and Europe the past few decades. Consumers appear to be accepting of private label brands as an alternative to national brands. Indeed, private labels have received more attention and credit as consumers feel they are just as good as national brands without the high retail price. China is currently moving into a market driven economy with an emerging middle class. The literature, however, reports little on the attitudes and perceptions of private label branding versus national branding in China. Ironically, China produces much of the private label products for large western retailers such as Wal-Mart, Target, and others.

This exploratory research contributes to the marketing education literature demonstrating that significant cross-national differences exist regarding students' beliefs and perceptions of private label branding. This study compares U.S. and Chinese university business students in three areas: a) important attributes on food-related products, b) beliefs about private label brands and price loyalty, and c) perceptions on private label brands. A total of 1070 usable surveys were collected in the U.S. and 252 in China. Statistically significant differences are presented, followed by discussion and implications.

WIRELESS CANOPY AS AN AGENT FOR ECONOMIC RECOVERY OF A DOWNTOWN AREA:
A CASE STUDY

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ABSTRACT

The advent of computer networks has ushered in an era of quick and efficient information exchange. The latest permutation on sharing information resources uses radio-frequency wireless network media to connect people and computers with the greatest flexibility since the advent of local area computer networks in the 1980s. As many small-towns grapple with how to return to the days when downtown business centers were the nexus of economic activity, the use of wireless networks to connect people and computers to information resources is being investigated and implemented as one mechanism to restore downtown economic activity and to distinguish downtown areas from Interstate located big-box retail centers. This paper provides a review of the literature concerning the implementation of wireless Internet connectivity in U.S. municipalities, presents empirical survey data and then discusses the issues and processes involved in investigating, designing, and implementing this distinction in the downtown area of Ellensburg, Washington.

ATTITUDES, PERCEPTIONS, AND TENDENCIES
TOWARD SOFTWARE PIRACY: A COMPARATIVE STUDY OF UNITED STATES AND SLOVAKIAN
STUDENTS

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April 12, 2006

ABSTRACT

Educators and businesses need to understand the perceptions, attitudes and tendencies of ethical and unethical uses and integration of information technology (IT). The better understanding we have of how students' attitudes, perceptions, and tendencies toward software piracy differ among university IT students, the greater educators and business leaders' ability to clearly communicate acceptable usage policies designed in part to protect valuable intellectual property. What is construed as software piracy? How often do students engage in software piracy? When using IT such as the Internet, what are the attitudes, perceptions and tendencies of plagiarism? What are the student perceptions of who is responsible for controlling software piracy? Over 200 studies have addressed ethics and academic dishonesty in education; this study is one of the few to look at ethics and IT in the university, comparing US students' attitudes toward software piracy with their counterparts in the Slovak Republic. We first review the limited research on IT and ethics; present the methodology; report the findings based upon empirical data taken from over 400 survey respondents; and conclude with implications and recommendations.

CEPS Professional Colloquium – Poster Presentation Submission

PODCASTING: CEPS TAKES THE LEAD!

Natalie Lupton, Lecturer
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Central Washington University

Podcasting is here at CEPS and CWU, and the students are ready! During winter quarter, 2006, podcasting was implemented in ADMG201 – Introduction to Business. The faculty member recorded each lecture in mp3 format and posted the podcasts in Blackboard, making them available to all students enrolled in the class. Students took a pre-and post-assessment of their knowledge and use of podcasting. Overall, the results of this innovative teaching methodology were very successful! Some of the highlights from student feedback:

1. Fifty-percent of the class indicated they downloaded, attempt to download, or listened to a podcast lecture.
2. Of those students, 63% listened to a podcast on their computers and 13% listened on their mp3 player.
3. Fifty-three percent listened to two or more podcasts.
4. Fourteen students agreed or strongly agreed that they believe listening to the podcasts were helpful in learning the class material.
5. Seventy-two percent of the class agreed or strongly agreed that podcasting should be offered again in this class, ADMG201.
6. Seventy-two percent of the class agreed or strongly agreed that they would like to see podcasting in other classes at CWU.

Some of the individual responses from students:

“The technology is amazing. I attended class regularly so I only used the podcasts to help build my vocabulary in the course through listening to them. I found that the podcasts helped me.”

“The podcastings were really helpful when I was preparing for the tests-it was awesome to be able to listen to your lectures while going through the Powerpoints again. I’d say if its not too much of a hassle, you should continue to offer them in your classes.”

Now two courses in the ITAM department are being podcasted this quarter – ADMG201 and ME350. We are ready CEPS!

IMPROVING RECRUITMENT AND RETENTION OF NATIVE AMERICAN STUDENTS IN THE FLIGHT TECHNOLOGY PROGRAM

Sloan, T.A., Associate Professor of Flight Technology, Central Washington University

Abstract: Despite significant Native American populations in three counties surrounding the Central Washington University (CWU) campus (U.S. Census Bureau Quickfacts (n.d.)), Native American students account for only 1.92% of the university's student population (CWU IR, personal communication, February 11, 2005). The percentage of such students enrolled in CWU's Flight Technology (FT) program is slightly higher (2.31%). The ten year degree completion rate for all FT students between 1994 and 2004 was 37.4%. The completion rate for Native American FT students during this period was 17.5% (CWU IR, personal communication, February 11, 2005). The purpose of this study is to:

1. Identify barriers to college recruitment and retention of Native American students.
2. Determine strategies to improve recruitment and retention of Native American students in the FT program.
3. Identify available resources at CWU to aid the FT program in implementing these strategies.

AVIATION, CONSTRUCTION AND ENGINEERING CAREER ACADEMY FOR YOUNG WOMEN

Hoover, A. L., Assistant Professor of Flight Technology, Central Washington University and Bender, W. J. Associate Professor of Construction Management, Central Washington University, Coonrod, L.S. Flight Technology Student, Central Washington University

Abstract: Created an opportunity for young women between the ages of 13 to 17 to explore their potential as future professionals in the career fields of aviation, construction and engineering. Our goal is to increase the number of young women who choose to pursue education and enter the workforce in these technical fields. This academy provided hands on learning experiences and activities to spark career interest in these fields. Hosted on the Ellensburg campus of Central Washington University during the summer of 2005, the first annual Women's ACE academy was sponsored by grants from industry and the University. The girls stayed in residence halls and had a chance to take a flight lesson, engineer a device, operate a backhoe, Cleaned up a mock-hazardous waste spill, design and test launch water rockets, use Global Positioning System (GPS) for a treasure hunt, and build an original project. The young women also learned about technical careers for women, met current women technical professionals, took a field trip to an active construction site, and tested construction materials in the laboratory. On Sunday CWU's President Jerilyn McIntyre presented the girls with certificates of completion and encouraged them to consider career fields that are not typically pursued by young women.

Effect of Concurrent Task Management Training a Single Pilot Task Prioritization Performance.
Hoover, A.L., Assistant Professor of Flight Technology Central Washington University

This study tested whether single-pilot multi-tasking skills can be trained. Task prioritization performance was evaluated for pilots who participated in a concurrent task management (CTM) training course and pilots who did not. CTM is the process by which pilots selectively attend to high priority tasks and shed non-priority tasks.

Twenty seven pilots enrolled in a university flight program were randomly assigned to an experimental group and a control group. Pilots flew pretest and posttest simulated flights on an FAA approved flight training device. Twenty potential task prioritization errors were embedded at 14 locations within the flight scenarios. Pretest CTM performance of the two groups was comparable. During a two week period between pretest and posttest simulated flights pilots in the experimental group participated in a CTM training course designed and taught by an FAA certified flight instructor and pilots in the control group did not.

A Mann-Whitney U test rejected the null hypothesis that there was no difference in posttest CTM errors between the groups, indicating a positive short-term training effect for experimental group pilots. Long-term training effects were not evaluated. These results support training multi-tasking skills in single-pilot operations.

INFLUENCE OF THE “BUILT” ENVIRONMENT ON PHYSICAL ACTIVITY OF ADULTS IN A SMALL RURAL COMMUNITY.

Twaddle, B., Graduate Assistant, Central Washington University; Papadopoulos, C., Assistant Professor of Exercise Science, Central Washington University.

The requirements to maintain regular physical activity are complex. It has long been suspected that the physical or built environment in which people live can promote or hinder physical activity. **Objective:** To compare environmental factors (e.g. presence of sidewalks, access to parks and walking pathways, presence of recreational facilities, etc.) that promote physical activity between older and younger adults residing in the same rural community. **Methods:** Fifty-three subjects completed a face-to-face interview about their perception of the environment in which they live and their physical activity habits. The instruments used to develop the questionnaire included the Environmental Supports for Physical Activity Questionnaire and the CHAMPS activities questionnaire. **Statistical Analysis:** Pearson correlations were used to show simple relationships between variables. Discriminant analysis was used to determine differences between age groups and their perceptions of the environment. Significance level was set to $p < 0.05$. **Results:** Younger adults (23.0 ± 2.4 years) expended $4,614 \pm 2,886$ kilocalories (Kcal) per week during moderate-intensity physical activity whereas the older adults (78.8 ± 8.1 years) expended $1,413 \pm 1,541$ Kcal per week. A significant ($p < 0.05$) inverse relationship ($r = -0.559$) was found between Kcal expended during moderate intensity physical activity per week and age. Both groups perceived their neighborhood and community as pleasant and safe to engage in physical activity. However, younger adults utilized private membership clubs and schools that are open for physical activity, while older adults relied more on sidewalks for their physical activity. **Conclusions:** These results suggest that older adults living in a small rural community prefer to be physically active around their neighborhood and that health promotion professionals should encourage home or neighborhood exercise programs for this population.

EFFECT OF STORAGE TECHNIQUES ON BLOOD LACTATE CONCENTRATION AND DETERMINATION OF VARIOUS LACTATE THRESHOLD DEFINITIONS

Garver, M.J., Graduate Student HHPR, Central Washington University; Nielsen, L.J., Graduate Student HHPR, Central Washington University; Dickinson, J.M., Graduate Student HHPR, Central Washington University; Campbell, D.S., Graduate Student HHPR, Central Washington University; Papadopoulos. C., Assistant Professor of Exercise Science, Central Washington University. .

Blood analysis is often used during exercise testing and periodically, analysis of blood samples occurs post testing. There is some speculation that storage technique may alter values obtained. Purpose: To investigate the effect of refrigeration of two storage techniques on blood lactate concentration (BLC) and to assess the influence of these techniques in the determination of Val associated with the threshold of various lactate threshold (LT) definitions. Methods: Six trained, competitive cyclists completed a continuous incremental maximal exercise test, in which Val, heart rate, and BLC were measured. Blood samples were collected at rest, post-warm-up, at the conclusion of each completed exercise stage and at maximal exercise via a venous catheter. Each sample drawn was divided between vials containing either potassium oxalate (PO) or lysing agent and were analyzed immediately posttest and again after storage for 72 h, 1 wk, and 4 wk. Analysis: A one-way repeated measures ANOVA was used to determine differences between mean BLC at each stage, BLC over time, and Val at the LT for each definition. Results: BLC was significantly increased with exercise intensity and the greatest shifts occurred between 0 and 72 hours for both storage techniques. This shift resulted in a significant difference in BLC for all stages for PO storage and stage 1 for lysed blood. The upward shift in the lactate curve resulted in significant changes in the Val associated with the LT of each storage technique for the fixed value definitions but not the mathematically or visually inspected definitions. Conclusion: Blood stored for 72 hours results in inaccurate readings of actual BLC for both lysed and PO storage techniques and alters the Val associated with the LT of the fixed concentration definitions.

PHYSIOLOGICAL AND METABOLIC RESPONSES DURING TWO SELF-SELECTED CYCLING TIME TRIALS

Nielsen, L. J., M. J. Garver, J. M. Dickinson, D. S. Campbell, C. Papadopoulos. *Central Washington University, Ellensburg, WA*. Email: nielsenl@cwu.edu

The lactate threshold (LT) has been used extensively to predict performance, prescribe exercise intensity, and monitor training adaptations. The LT is usually determined by using an incremental exercise protocol. However, during prolonged exercise, physiological and metabolic responses are not always the same as predicted from an incremental protocol.

PURPOSE: The purpose of this study was to investigate physiological and metabolic responses during two self-selected time trials (TT) and to compare these responses to three lactate threshold definitions (1.0 mmol above resting blood lactate concentration; LT_{b+1} , fixed blood lactate of 4.0 mmol; $LT_{4.0}$, and Dmax method; LT_{Dmax}). **METHODS:** Five trained, competitive cyclists (age: 23.8 ± 3.8 yrs; height: 180.5 ± 4.1 cm; weight: 80.8 ± 8.8 kg; body fat: 10.4 ± 5.6 %; $\dot{V}O_{2max}$: 58.1 ± 4.9 ml \cdot kg $^{-1}$ \cdot min $^{-1}$) participated in this study. Each subject completed three testing protocols, which were separated by a minimum of 1 week. The first test consisted of an incremental maximal exercise test on a cycle ergometer. On two separate occasions, a self paced 20 kilometer (k) and a 40k TT was completed. During these trials, power output (PO), heart rate (HR), and blood lactate (LA) responses were measured. Blood samples were collected through a venous catheter placed in an antecubital vein to determine lactate responses. A dependent t-test was used to determine statistical difference for the mean power output, LA, and HR response between the two TT. In addition, a one-way ANOVA was used to compare the responses corresponding to the three lactate threshold definitions and the responses during the two TT.

RESULTS: The mean lactate concentration during the 20k TT (6.22 ± 1.4 mmol) was significantly higher than the mean lactate concentration during the 40k (3.86 ± 1.0 mmol). Power output ($p = 0.03$) and HR ($p = 0.0002$) were significantly higher during the 20k compared to the 40k TT. Mean LA concentration during the 20k was significantly higher than those at the three LT definitions. Power output during the 20k was only significantly different from the $LT_{4.0}$, whereas HR was significantly different from the LT_{b+1} and LT_{Dmax} . During the 40k, mean PO was significantly higher than the LT_{b+1} and LT_{Dmax} , but not for the $LT_{4.0}$. Finally, HR response during the 40k was significantly different from the LT_{b+1} .

CONCLUSION: These results indicate that responses at different lactate thresholds may not be representative of responses during two different self-selected time trials.