

# **Kristin Joelle Heumann, PhD, HFS, CSCS**

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## **EDUCATION**

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- Doctor of Philosophy, Physical Activity, Nutrition & Wellness  
Arizona State University  
Department of Exercise & Wellness, Mesa, Arizona May 2011  
Dissertation: "The Response of Osteocalcin and Ultrasound to Exercise"  
Committee Members: Pamela Swan, Chair; Brent Alvar; Linda Vaughan; Jack Chisum
- Master of Science, Exercise & Wellness  
Arizona State University  
Department of Exercise & Wellness, Mesa, Arizona May 2008  
Thesis: "Os Calcis Stiffness Index in Jump Ropers and Normally Active Girls"  
Committee Members: Pamela Swan, Chair; Carol Johnston; Chong Lee
- Bachelor of Arts, Physical Education with a concentration in Fitness Management  
Northwestern College May 2006  
Department of Kinesiology, Orange City, Iowa

## **TEACHING EXPERIENCE**

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### *University-Based*

- Assistant Professor, Department of Kinesiology**  
**Colorado Mesa University, Grand Junction, Colorado August 2011 - Present**
- KINA 170 – Latin Rhythms Spring 2012-Present  
This activity course is designed to introduce students to individual latin dance movements and choreography. The class is designed to improve cardiovascular fitness. Students are required to teach one pre-choreographed song to the class by the end of the course.
- KINE 301 – Tests and Measurements in Sport and Physical Education Fall 2011-Present  
The purpose of this course is to help the students develop skills relating to the assessment of their students/clients fitness and knowledge. Statistics are used to demonstrate how to assess a group and explain results of the testing administered.
- KINE 303 – Physiology of Exercise Fall 2011, 2012, 2013  
This course studies human movement with an emphasis on physiological function of the body in response to physical activity and exercise. Hands-on experience within the laboratory is used to teach the students assessment and function at rest and during exercise.
- KINE 309 – Anatomical Kinesiology Fall 2011-Present  
This course examines the structures and function of the human body, focusing on the musculoskeletal and musculotendinous systems. Hands-on experience within the laboratory is used to help the students understand how the muscles and bones work together to produce movement.

KINE 403 – Advanced Strength and Conditioning Fall 2012, 2013

This course prepares students to become Certified Strength and Conditioning Specialists of the National Strength and Conditioning Association. Students learn about the role of specific training principles and tools to improve performance.

KINE 411 – Worksite Wellness Spring 2012, 2013, 2014

The purpose of this course is to introduce students to worksite health promotion including the evidence to support the utilization of a health promotion program, program design and implementation. Students spend the semester developing a proposal for a worksite program within a professional organization.

KINE 415 – Physical Activity and Aging Spring, Summer 2013, Spring 2014

This course examines the dynamic relationship between physical activity and the aging process. The course focuses on the impact of physical activity on the physiological, psychological, and social well-being of older adults.

KINE 494 – Structured Research Fall 2011-Summer 2012

The purpose of this independent project is to develop the student's experience in conducting research. Students are also guided in their formation of a journal-style research article about their research project.

KINE 499 – Internship Spring 2013-Present

Work experience obtained where assignments are related to the student's specific concentration area within the Kinesiology degrees.

**Teaching Associate, College of Nursing & Health Innovation**

**Department of Exercise & Wellness**

**Arizona State University, Mesa, Arizona**

**August 2007 – July 2011**

EXW 310 – Technology in Physical Activity Fall 2010, Spring 2011, Summer 2011

This class is designed to help the student to learn to incorporate technology into the field(s) of fitness, wellness, and physical activity. In addition, familiarization with statistical procedures and applications are utilized.

EXW 215 – Physical Activity and Healthy Lifestyles Fall, Summer 2008, Spring, Summer 2010

The purpose of this course is the application of principles of physical activity to personal fitness testing and program planning for people of all ages, and above all, to have fun while doing it! Physical Activity and Healthy Lifestyles is delivered through lecture material available as online videos, textbook readings, a variety of physical activity and health behavior self assessments, and a variety of online quizzes and assessments.

EXW 301 – Concepts of Fitness and Wellness Fall, Summer 2008, Spring, Summer 2010

This course examines guidelines for achieving health benefits of physical activity and other healthy lifestyles. It is for all students in the university whose major area of study is not Exercise & Wellness. The assumption is that all college graduates can experience the health benefits of appropriate regular physical activity. The purpose of this class is to give the student practical experiential learning and assess knowledge and comprehension of the key concepts presented in the PowerPoint's, videos, and textbook concepts.

EXW 315 – Lab for Exercise Physiology

This course studies human movement with an emphasis on physiological function of the body in response to physical activity and exercise. Hands-on experience within the laboratory is used to teach the students assessment and function at rest and during exercise.

EXW 212 – Instructional Competency Lab: Cardiovascular Fitness Fall 2008-Fall 2009

This theory/hands-on course is designed to help the student learn various safe and effective teaching methods and modalities that are appropriate for individuals as well as various age groups and physical abilities. This course provides the student with a basic understanding of the effects of cardiorespiratory exercises and general scientific principles relative to improving cardiorespiratory fitness. Specific core competencies are identified and addressed to provide the student with greater knowledge of requirements for various certifications.

EXW 105 – Aerobics Fall 2007-Spring 2008

This course is designed to introduce the student to aerobic group exercise class through a variety of types and styles of movement. This course covers both hi/lo impact activities including walking/jogging routines, circuit training, step aerobics, kickboxing, jump roping, and power exercise. Props necessary for these activities such as hand weights, jump ropes, stability balls, mats, steps, and bands will be utilized.

EXW 105 – Weight Training Fall 2007-Spring 2008

This course is designed to introduce the student to weight training through a variety of modalities involved with effective weight training including free weights, resistance equipment, bands, tubing, stability balls, and one's own body weight. This course covers how to safely use weight training in an exercise program, which muscles are being utilized in which exercises, weight training terminology, and how to design an exercise program.

**Teaching Assistant, School of Health Sciences**

**Universidad Europea de Madrid, Madrid, Spain**

**January 2010 – May 2010**

Practicum – Physical Fitness & Health

Spring 2010

This hands-on course is designed to introduce students to physical fitness assessments and how to assess the client.

Aging and Older Adults

Spring 2010

This course is designed to help the students learn how to appropriately develop exercise programs for the aging adult population. Lecture and translation of research articles are utilized to familiarize students with recommendations specific to this population.

**Masters Lecturer, EUROSPORT Masters in Multimedia Sports Journalism**

**Universidad Europea de Madrid, Madrid, Spain**

**February 2010**

Physical Activity Sciences

This introductory class is designed to introduce journalism students to the exercise science, sport, and health field. Information is provided to students to educate them on health benefits of physical activity, appropriate sport programming, and assessment techniques utilized in the exercise science field.

*Community College-Based*

**Adjunct Faculty, Departments of Physical Education, Health Science, and Exercise Science  
Chandler Gilbert Community College, Chandler, Arizona August 2008 – Spring 2011**

EXS 212F – Instructional Competency Lab: Flexibility Fall 2010, Spring 2011

This is a hands-on course designed to teach the student how to safely and effectively instruct a wide variety of flexibility exercises one-on-one, and to groups of adults of varying ages and physical abilities. This course will cover fundamentals of participant screening, proper warm-up and cool-down, instruction of flexibility exercises, and group instruction skills. The course will address a significant number of core competencies identified for the ACSM Health Fitness Instructor Certification, as well as the NSCA Certified Strength and Conditioning Specialist and Certified Personal Trainer examinations.

PED 117 – Weight Training Fall 2008, Fall, Spring 2009, Fall 2010, Spring 2011

Fitness activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up, aerobic exercise, selected strength exercises, and cool down.

HES 100 - Healthful Living Spring 2009, Spring 2011

This class is designed to help the student to learn the facts about personal health, wellness, and physical activity, to become an informed health, wellness, and exercise consumer, and to plan a personal lifetime health and wellness program. It is for all “first year” athletes at the college regardless of major area of study. The assumption is that all college graduates can experience the health benefits of appropriate regular physical activity. The ultimate goal is to help the student plan for a lifetime of health, wellness, and physical activity.

PED 115 – Lifetime Fitness Fall 2008, Spring 2009

Fitness activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up, aerobic exercise, selected strength exercises, and cool down.

EXS 212C - Instructional Competency Lab: Cardio Fall 2008

This theory/hands-on course is designed to help the student learn various safe and effective teaching methods and modalities that are appropriate for individuals as well as various age groups and physical abilities. This course provides the student with a basic understanding of the effects of cardiorespiratory exercises and general scientific principles relative to improving cardiorespiratory fitness. Specific core competencies are identified and addressed to provide the student with greater knowledge of requirements for various certifications.

**TEACHING INTERESTS**

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Sociocultural Aspects of Exercise & Sports  
Physical Fitness Assessments  
Fitness Management  
Exercise Testing

Concepts of Physical Fitness  
Cardiovascular Fitness Training  
Strength and Conditioning Training  
Exercise Prescription

## **RESEARCH EXPERIENCE**

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Research Assistant, "ASUKI-Step" Project, Arizona State University Polytechnic, 2009

Barbara E. Ainsworth, Professor

Volunteered to assist with data collection including: measuring height, weight, blood pressure, quantitative ultrasound, waist girth, waist diameter, and the Astrand submaximal bicycle ergometry test.

Research Assistant, "Effects of Combat on Physical Fitness and the Influence on Utilization of Medical Resources," Arizona State University Polytechnic, 2009-2010

Bradley Warr, PhD candidate

Volunteered to assist with data collection including: measuring height, weight, body composition using both bio-electrical impedance and Bod Pod, VO<sub>2</sub>max with a modified Bransford and Howley Protocol, 2-minute push-up max and sit-up max tests, bench press and squat one-repetition max test.

Research Assistant, "Comparison of Total Body Water in High School Wrestlers Using Bio-Impedance Measures," Arizona State University Polytechnic, 2008

Chris Keating, MS

Volunteered to assist with data collection including: measuring height, weight, body composition using both bio-impedance spectroscopy and multi-frequency bio-electrical impedance, and hydration status.

## **RESEARCH INTERESTS**

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Quantitative ultrasound of the calcaneus in response to exercise across the lifespan

The effects of jump roping on health indices

The effects of Zumba exercise on health and psychological indices

## **GRANT ACTIVITY**

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### *Internal Grants*

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| 2012-2013 | Colorado Mesa University Professional Development Award to present at the National Strength and Conditioning National Conference - \$1,690. |
| 2011-2012 | Colorado Mesa University Professional Development Award to present at the Annual American College of Sports Medicine Meeting - \$1,351.     |
| 2010-2011 | Arizona State University Graduate and Professional Student Association Research Grant Competition Award – \$2,000 (Principal Investigator)  |
| 2010-2011 | Arizona State University Charles Corbin Research Fellowship - \$500 (Principal Investigator)  |
| 2010      | Arizona State University Graduate and Professional Student Association Travel Award - \$750 (Principal Investigator)                        |
| 2009-2010 | Arizona State University Graduate and Professional Student Association Research Grant Competition Award - \$750 (Principal Investigator)    |
| 2007-2008 | Arizona State University Graduate and Professional Student Association Research Grant Competition Award - \$1,900 (Principal Investigator)  |
| 2007      | Arizona State University Charles Corbin Research Fellowship - \$500 (Principal Investigator)  |

*External Grants*

2010 Amateur Athletic Union Jump Rope Division Grant for Research - \$2,000 (Principal Investigator)

**PEER-REVIEWED PUBLICATIONS**

Herrmann, S.D., **Heumann, K.J.**, Der Ananian, C.A. Ainsworth, B.A. (2013). Validity and reliability of the Global Physical Activity Questionnaire (GPAQ). *Measurement in Physical Education and Exercise Science*, 17, 221-235.

Malehorn, K., Hiniker, J., Mackey, T., **Heumann, K.J.**, Murray, S.R., Pettitt, R.W. (2013). Kinesio Tape® Applied to the Thorax Augments Ventilatory Efficiency during Heavy Exercise. *International Journal of Exercise Science*, 6(2), 157-163.

Warr, B.J., **Heumann, K.J.**, Dodd, D.J., Swan, P.D., Alvar, B.A. (October, 2012). Injuries, changes in fitness, and medical demands in deployed National Guard soldiers. *Military Medicine*, 177(10), 1136-1142.

Warr, B.J., Alvar, B., Dodd, D., **Heumann, K.**, Mitros, M., Keating, C., Swan, P.D. (November, 2011). How do they compare?: an assessment of pre-deployment fitness in the Arizona National Guard. *The Journal of Strength and Conditioning Research*, 25(11), 2955-2962.

**PROFESSIONAL PRESENTATIONS**

**Heumann, K.J.**, Warr, B.J., Alvar, B., Swan, P.D. (July, 2013). The Indices of Bone in Response to Exercise. Poster presentation to be presented at the *National Strength and Conditioning Association National Conference*, Las Vegas, Nevada.

**Heumann, K.J.** (June, 2013). The Role of Vibration Training in Strength and Conditioning. Oral presentation presented at the *National Strength and Conditioning Association New Mexico State Clinic*, Albuquerque, New Mexico.

Warr, B.J., **Heumann, K.J.**, Alvar, B. (July, 2012). Effects of vibration training versus jump training on muscle strength and power. Poster presented at the *35<sup>th</sup> Annual National Strength and Conditioning Association National Conference*, Providence, Rhode Island.

**Heumann, K.J.**, Warr, B.J., Swan, P.D. (March, 2012). Effect of exercise training on changes in osteocalcin, a biomarker of bone formation. Poster presented at the *Rocky Mountain Chapter of the American College of Sports Medicine Annual Meeting*, Colorado Springs, Colorado.

**Heumann, K.J.**, Warr, B.J., Swan, P.D. (June, 2011). Feasibility of measuring acute OCSI changes in 2 exercise groups. Poster presented at the *58<sup>th</sup> Annual American College of Sports Medicine Meeting*, Denver, Colorado.

Warr, B.J., Alvar, B., Dodd, D., **Heumann, K.J.**, Mitros, M., Keating, C., Swan, P.D. (June, 2011). How does combat effect fitness? An evaluation of deployed Arizona National Guardsmen. Presented orally at the *58<sup>th</sup> Annual American College of Sports Medicine Meeting*, Denver, Colorado.

- Heumann, K.J.**, Swan, P. (October, 2010). Feasibility of measuring acute changes in os calcis stiffness index following whole-body vibration with resistance and jump training in young women. Orally presented for the student research award competition at the *Southwest Chapter of the American College of Sports Medicine Annual Meeting*, San Diego, California.
- Heumann, K.J.**, Warr, B., Swan, P. (June, 2010). Body composition and the relationship to strength and power. Poster presented at the *57<sup>th</sup> Annual American College of Sports Medicine Meeting*, Baltimore, Maryland.
- Keating, C.J., Swan, P., **Heumann, K.J.** (June, 2010). Comparison of total body water in high school wrestlers using bio-impedance measures. Poster presented at the *57<sup>th</sup> Annual American College of Sports Medicine Meeting*, Baltimore, Maryland.
- Heumann, K.J.**, Swan, P. (May, 2010). Feasibility of Measuring Acute Changes in Os Calcis Stiffness Index Following Whole Body Vibration With Resistance and Jump Training in Young Women. Poster presented at the *International Osteoporosis Foundation World Congress on Osteoporosis*, Florence, Italy.
- Herrmann, S., **Heumann, K.J.**, Bowles, H., Meckes, N., Ainsworth, B. (May 2010). Evaluation of the Global Physical Activity Questionnaire (GPAQ). Poster presented at the *International Congress for Physical Activity and Health*, Toronto, Canada.
- Heumann, K.J.**, Swan, P.D., Ainsworth, B., Yngve, A. (October, 2009). Comparison of bone strength in adults classified by ACSM physical activity guidelines. Poster presented at the *Southwest Chapter of the American College of Sports Medicine Annual Meeting*, San Diego, California.
- Herrmann, S., **Heumann, K.J.**, Bowles, H., Ainsworth B. (October, 2009). Validity of the Global Physical Activity Questionnaire (GPAQ). Poster presented at the *Southwest Chapter of the American College of Sports Medicine Annual Meeting*, San Diego, California.
- Keating, C., Swan, P., **Heumann, K.J.** (October, 2009). Comparison of total body water in high school wrestlers using bio-impedance measures. Poster presented at the *Southwest Chapter of the American College of Sports Medicine Annual Meeting*, San Diego, California.
- Heumann, K.J.**, Swan, P.D., Kahl, K. (May, 2009). Effects of varying sports and normal activity in pre-pubescent 10-year old girls. Thematic poster presented at the *56<sup>th</sup> Annual American College of Sports Medicine Meeting*, Seattle, Washington.
- Heumann, K.J.**, Swan, P.D. (November, 2008). A comparison of calcaneal ultrasound measurements in competitive jump ropers and normally active females. Poster presented at the *Southwest Chapter of the American College of Sports Medicine Annual Meeting*, San Diego, California.
- Heumann, K.J.**, Swan, P.D. (February, 2008). Comparison of Calcaneal Ultrasound in Competitive Jump Ropers and Age Matched Controls. Poster presented at the *Building Healthy Lifestyles Conference*, Arizona State University, Mesa, Arizona.

## **COMMUNITY PRESENTATIONS**

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- 2009 In-Service at Arizona State University, Mesa, AZ  
 “Jump Rope Instruction Training” for Physical Educators
- 2008 Seminar at Freescale Semiconductor, Tempe, AZ  
 “Diabetes: Care and Prevention”
- 2007 Seminar at Freescale Semiconductor, Tempe, AZ  
 “The History and Benefits of Jump Rope for Health”

## **PROFESSIONAL EXPERIENCE**

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- 2007-2008 Senior Lifestyle Coordinator, Freescale Semiconductor, Tempe, Arizona  
 Handled new member registration, planned recreation events, performed fitness assessments, taught group exercise classes, and personal trained members
- 2007 Jump Rope Instructor, Rancho Solano, Gilbert, Arizona  
 Taught elementary school students in an after school jump rope program.  
 Developed plans for the program and interacted individually with students.
- 2006 Personal Trainer, Arizona State University, Mesa, Arizona  
 Instructed research subjects on how to properly perform exercises.
- 2006 Administration Specialist, Grand Canyon State Games, Tempe, Arizona  
 Entered participant registration into database, collected and accounted for money received, worked with commissioners to prepare and organize volunteers for each sport event, and prepared registration and athlete check-in for event day.
- 2005 Intern, Grand Canyon State Games, Tempe, Arizona  
 Entered participant registration into database, attend sporting events, and organize registration information for each sport site.
- 2004-2006 Fitness Instructor, Northwestern College, Orange City, Iowa  
 Instructed group fitness including: step aerobics and cardio jump rope.
- 2003-2004 Fitness Instructor, Fort Lewis College, Durango, Colorado  
 Instructed group fitness: cardio jump rope.

## **CERTIFICATIONS**

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- 2012-Present National Strength and Conditioning Association, Certified Strength and Conditioning Specialist
- 2010-Present Zumba Licensed Instructor
- 2009-Present American College of Sports Medicine Health Fitness Specialist
- 2006-Present CPR/AED Professional Rescuer
- 2003-Present Coaching Certification: American Sport Education Program

## **PROFESSIONAL SOCIETY MEMBERSHIPS**

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American College of Sports Medicine  
 National Strength and Conditioning Association



**SERVICE**

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*Academic*

2013-Present	Dance Professor Search Committee, Colorado Mesa University, Grand Junction, CO
2013	Athletic Training Education Program Clinical Coordinator Search Committee, Colorado Mesa University, Grand Junction, CO
2013	Athletic Training Education Program Director Search Committee, Colorado Mesa University, Grand Junction, CO
2012	Invited Reviewer, Journal of <i>BMC Pediatrics</i>
2012-Present	Who's Who Committee, Member, Colorado Mesa University, Grand Junction, CO
2012-Present	Wellness Committee, Member, Colorado Mesa University, Grand Junction, CO
2012-Present	Benefits Committee, Member, Colorado Mesa University, Grand Junction, CO
2012-Present	Faculty Senate Salary and Benefits Committee, Member, Colorado Mesa University, Grand Junction, CO
2012	Head Swimming Coach Search Committee, Colorado Mesa University, Grand Junction, CO
2012	Monfort Family Human Performance Lab Director Search Committee, Colorado Mesa University, Grand Junction, CO
2011-Present	Academic Advising, Advisor, Colorado Mesa University, Grand Junction, CO
2011-Present	Graduate Curriculum Committee, Member, Colorado Mesa University, Grand Junction, CO
2007-2011	Building Healthy Lifestyles Conference Registration Committee, Vice-President & President of Building Healthy Lifestyles Student Organization, Arizona State University, Mesa, Arizona
2007-2011	President: ASU Exercise and Wellness Graduate Club, Arizona State University, Mesa, Arizona
2009	Guest Lecturer, EXW 450 – Cultural and Social Issues in Exercise and Wellness, Arizona State University, Mesa, Arizona
2009	Writing Group Studio Leader, Arizona State University, Mesa, Arizona
2006	Teaching Assistant, EXW 425 – Exercise Prescription, Arizona State University, Mesa, Arizona
2004-2006	President & Vice-President: Kinesiology Klub, Northwestern College, Orange City, Iowa

*Community*

2013-Present	Member: Built Environment Committee, Mesa County Health Department
2013-Present	Member: Urban Trails Committee for the City of Grand Junction, CO
2010-2011	Member: Women's Auxiliary Board for Improving Chandler Area Neighborhoods
2007-2011	Co-Commissioner & Commissioner of Jump Rope: Grand Canyon State Games, Tempe, Arizona
2007-2011	Volunteer for the Grand Canyon State Games, Summer, Winter, and Native American Games, Winners Circle Weekend, Tempe, Arizona
2008-2011	Annual Volunteer Events: Frank Kush Family Fun Run and Dog Walk, Tempe, Arizona Relay for Life, Mesa, Arizona

**AWARDS**

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- 2010 Gail Butterfield Award Recipient, Southwest American College of Sports  
Medicine Student Research Award Competition, San Diego, California
- 2006 Physical Education Major of the Year Award, Northwestern College, Orange  
City, Iowa
- 2004 Amateur Athletic Union Major Contributor to the Sport of Jump Rope, Des  
Moines, Iowa
- 2002 Joe Selleh Award, Tempe, Arizona