Pittsburg State University

Health, Human Performance, and Recreation

EDITED BY: ANDREA GADDY AND KIERSTEN MORRIS

VOLUME 1, ISSUE 13

INSIDE THIS ISSUE:

Outstanding Alumni Award Recipient: John Lair

John Lair earned a bachelor's degree in recreation from PSU in 1996 and later a master's degree in recreation from Missouri Southern State University.

Lair began his professional career in Pittsburg at New Horizons, where he worked with adults with intellectual disabilities. New Horizons eventually grew into New Hope Services where Lair transitioned into the role of program director. Currently, he serves as the Executive Director of New Hope Services.

In 2001, Lair began the work of establishing a Special Olympics team, which became the New Hope Bulldogs and today serves as a bridge between people with intellectual disabilities and the community. He is a certified coach in 16 team and individual sports and has volunteered more than 2,000 hours for Special Olympics last year alone, all in addition to his full-time job.

In 2011, he was a Special Olympics USA coach at the 2011 World Games in Athens, Greece. In 2015, Lair was selected as powerlifting coach for the 2015 Special Olympics World Summer Games. Lair has coached six national champions and five world champions.

ESPN has featured Lair and one of his star athletes, Chevi Peters, in an article titled "Weight of the World" (http://es.pn/2dGdXAt) and a feature piece called "Lifted" (http://bit.ly/2dfgAtF)

Under Lair's guidance, New Hope athletes have graduated from special Olympics' Global Messenger program, in which they are formally trained in public speaking and advocacy. In addition, a majority of New Hope athletes are employed in the Pittsburg community, with Lair serving as their volunteer job coach.

Lair also established two nutrition programs for his athletes and has inspired them to improve their daily fitness and nutritional habits.

For his work, Lair has received the highest honor Special Olympics can bestow upon a coach, The North American Coach of the Year Award. To put this honor in perspective, there are 145,000 coaches in North America and 5100 in Kansas alone.

Lair and his wife, MeLinda, live in Pittsburg.

(Article used by permission of PSU Marketing)

Chair's Message

Dr. John Oppliger

Welcome to the fall edition of the HHPR Newsletter. For our readers living a great distance away from Pitt State, the weather has been far more like spring than fall. The students and faculty have been busy as usual and continue to be involved in a wide-array of activities which bring acclaim and recognition to the department.

You will notice the front page of the newsletter features a nice story on John Lair, one of PSU's Outstanding Alumni Award recipients. After reading this piece, one will have nothing but admiration for John and what he had done in his career.

At the annual convention of the Kansas Association for Health, Physical Education, Recreation and Dance (KAHPERD) hosted by Fort Hays State University on November 2-4, our students won the award for the most student KAHPERD members who registered and attended the convention. This traveling award is really quite an accomplishment when one considers our students had to travel further than any other group in the state! In addition, several students and faculty received recognition for their various endeavors. Indeed, the department made a fine showing at the awards banquet.

Dr. Carper, Dr. Crawford and a group of Exercise Science majors attended and presented several research investigations at the Central States Chapter of the American College of Sports Medicine conference held at the University of Arkansas. We are including the abstracts in this newsletter.

Dance continues to grow in popularity at PSU. Dr. Jewett coordinates the Dance Minor and certificate program as well as teaching several of the dance courses. She also sponsors the PSU Dance Club. Students from her Dance Appreciation class once again performed at the City of Pittsburg's Christmas Parade.

Photos are fun and we try to include some from the numerous activities which have occurred this fall, such as the Camping and Outdoor Education trip, share days at local schools, therapeutic recreation events and more.

Finally, we want expresses a sincere thank you to all who have contributed to the department's endowment and will always welcome visits from our alumni family. We would appreciate hearing from alums and with their permission, be able to include them in some manner in future issues of this newsletter.

ALUMNI SPOTLIGHT

Kimber Vietti

A lifelong health and fitness enthusiast, Kimber (Kirkland) Vietti graduated from Pittsburg State University in May 2000 with a Bachelor's of Science in Recreation with emphasis in Fitness Management and a minor in Business Administration. Upon graduation, Kimber continued to pursue her passion in this field as an employee of the San Diego County of YMCAs. There, she worked as a Program and Wellness Coordinator at the La Jolla YMCAs where she developed, implemented and oversaw all Health and Wellness programs within the Fitness Department. The most rewarding aspect of the position included the positive feedback she received from members who were empowered and energized by the initiatives she developed. Building upon that success, in 2001 she sought and was offered a Graduate Assistant position at Pittsburg State and returned home for her Master's Degree in Physical Education. While at Pitt State, she worked in the Lifetime Fitness Concepts Lab under the direction of Dr. Janice Jewett. After graduation, Kimber relocated to Atlanta, Georgia, and focused her skillset in sales while continuing to enjoy the ability to help people live healthier lifestyles.

She has spent her entire career working in the fitness industry, primarily in outside and inside sales for Retail and Commercial companies that specialize in selling high-end fitness equipment. Kimber's career grew through several phases, beginning with the role of Fitness Equipment Retail Sales Consultant. The job required Kimber to develop relationships with customers and provide the best solutions to help them reach their fitness goals. Her aim was to provide the customer with a knowledgeable recommendation of fitness equipment and to educate them on how to build, execute, and perform a successful home fitness regimen. Through this experience and her devotion to fitness, Kimber became a recognized expert both inside her company and in the broader industry at large.

After two years, her increasing expertise and skill merited the promotion to Commercial Sales Manager, a position utilizing her consultative and customer relations prowess. In this role, Kimber fostered relationships with wellness centers, government municipalities, multi-housing fitness centers, corporate fitness sites, senior living centers, and personal training studios. For these commercial, government, and community enterprises, she designed and marketed fitness solutions to enhance user health and wellness while promoting the organization's overall business goals. This required Kimber to provide expert advice on fitness and exercise equipment to customers by staying current with market trends, medical research and equipment development.

Currently, Kimber works for a specialty fitness company called Premier Fitness Source in Atlanta, Georgia. This company specializes in the distribution of the highest quality fitness brands available in the industry. She offers her proven experience to clients within the company's newest location while serving as the Store Manager. Kimber is relied upon in this organization for her many years of in depth product, wellness, and biomechanics knowledge. She is often called upon to provide training for the company in these areas. Her professional goal remains working one-on-one with all people to help them live their healthiest lives possible through exercise and personal wellness.

Kimber takes pride in maintaining her own health and wellness. She became a certified IMX Reformer-based Pilates instructor in 2012 and spent a year teaching professional and comprehensive Pilates training programs to members at Lifetime Fitness gyms in Atlanta.

She also enjoys running and keeping up with the current fitness trends like Orange Theory Fitness, RowBarre, FlyWheel, and Pure Barre. Her family still resides in Pittsburg and she is always eager to come home to see the beautiful campus, cheer on the latest Gorillas' success, and catch up with the news from the University she is proud to call her alma mater.

Welcome to HHPR

Ms. Sarah Ball is an assistant professor of recreation. Before joining the Health, Human Performance, and Recreation Department at PSU, Ms. Ball spent eight years working in Oxford, MS where she spent the last three years serving as director of a community volunteer center housed under the local park commission. Prior to that, Ms. Ball worked five years in a recreation therapy department at a state mental health facility for individuals with intellectual and developmental disabilities (IDD), during which she served two years as the Director of Area 4 Special Olympics Mississippi. Ms. Ball also worked as an aerobics and water aerobics instructor for an older adult fitness program and worksite wellness program.

Ms. Ball holds a Bachelor of Science Degree in Exercise Science and a Master of Arts Degree in Parks and Recreation Management, both from the University of Mississippi. She is currently pursuing a Doctor of Philosophy Degree in Health and Kinesiology with an emphasis in Health Behavior and Promotion at the University of Mississippi. Ms. Ball is a member of the Society of Public Health Education (SOPHE) and the Kansas Association for Health, Physical Education, Recreation and Dance (KAHPERD).

Ms. Ball's research interests include combining the fields of recreation and health that creates a cross-disciplinary collaboration. Her past and current research efforts explore how engaging in recreation outlets relate to health outcomes as well as examining predictors of engaging in recreation outlets that promote a healthy lifestyle.

Research Interests

Recreation and health outcomes
Health and wellness
Physical activity

Welcome to HHPR

Dr. Rick Hardy teaches classes in Recreation Administration, Design of Recreation Facilities, Recreation Program and Design, Management Strategies in Recreation, and Commercial Recreation at the undergraduate level and other courses at the graduate level at Pittsburg State University. He attended North Carolina State University where he earned both a Bachelor of Science Degree (1993) and a Master of Science Degree (1995) in Parks, Recreation, and Tourism Management while working as a research assistant in the Office of Park and Tourism Research. Dr. Hardy then earned a Master of Science Degree (1997) in Advertising from the University of Illinois. After teaching at the college level for several years Dr. Hardy returned to North Carolina State University and earned his Doctorate in Parks, Recreation, and Tourism Management (2010).

Dr. Hardy has given presentations at the state, national and international levels. He has taught at North Carolina Central University, North Carolina State University, East Carolina University, The State University of New York at The College of Brockport, and Missouri Western State University. He was appointed by the Mayor to serve on the Tourism Occupancy Tax Citizens Committee in Saint Joseph, Missouri.
Dr. Hardy developed and supervised the internship program at Missouri Western State University for the Kansas City Chiefs during the Chief's training camps.

For the past several years, Dr. Hardy has been an active member in Missouri Recreation and Parks Association (MRPA) and Missouri Association of Health, Physical Education, Recreation and Dance (MOAHPERD).

Research Interests

Students' preparedness as they transition from University to the workforce
Tourism development in small towns and rural settings
Agritourism
The phenomena of passenger/customer shaming via social media and the effect on the tourism industry.

HHPR Graduate Assistants 2016-2017

Kylie Brown
HP Lab Assistant &
Lifetime Fitness
Instructor

Natalie Magee-Darling
Dance Instructor

Nick Drake
HP Lab Assistant,
Activity & Lifetime
Fitness Instructor

Molly Freisberg
Activity, Lifetime Fitness
Instructor, & KAHPERD
Journal Student Editor

Devin Hance
Activity, Camping &
Outdoor Education
Instructor

Scott Lester
Activity & Lifetime
Fitness Instructor

KAHPERD Convention
November 2-4, 2016 — Hays, Kansas

Kylie Brown (left) accepting her Graduate Student of the Year for Research Award

Taylor Brumbaugh received Undergraduate Student in Recreation Award.

Ryan Metcalf received Undergraduate Student Major Award in Teaching

Dr. John Oppliger received the Wayne Osness Honor Award.

Pictured left to right : (Back) Dr. Rob Hefley, Dr. Rick Hardy, Jessica Hunter, Molly Freisberg, Devin Hance, Kylie Brown, Nick Drake, Scott Lester, Dr. Janice Jewett, Sarah Ball.
(Front) Dr. Julia Spresser, Dr. John Oppliger, Natalie Magee, Noelle Gambill, Dr. Scott Gorman, Jason Ramirez

KAHPERD
KANSAS ASSOCIATION FOR
Health • Physical Education • Recreation • Dance

Dance Sharing Day

Dr. Janice Jewett's Dance Appreciation classes visited Meadowlark, Lakeside, and Westside Elementary schools. The class worked with approximately 40-45 kindergarten through second grade students teaching simple dances such as Monkey in the Middle, the Chicken Dance, and a modified Virginia Reel.

Camping Class Enjoys University Lake

Dr. Oppliger, Mrs. Grimes, Dr. Gorman, and Ms. Covert attending the opening ceremony with their Freshmen Experience classes

A student group leads the class in a game of Beep Ball in Ms. Ball's Recreation Methods and Leadership class.

Paige White, HHPR Physical Education Major, was nominated as a 2016 Homecoming Queen Candidate by the National Residence Hall Honorary.

Congrats Paige!!!!

TR Students Participate in Goalball

Ms. Laura Covert's Therapeutic Recreation students seized a unique opportunity recently when they were exposed to Goalball. Goalball is a Paralympic sport that was invented in 1946 to assist in the rehabilitation of WWII veterans. The sport is mainly for individuals with limited vision or who are blind. Jim Debus, who is blind and plays the sport, demonstrated the sport to students; then the fun began. Students were taught how to communicate through clapping and listening for the bell-filled ball. The objective is to keep your opponent from scoring a goal by lying across the goal line and stopping the ball.

Students came away with an appreciation for those individuals who are visually impaired and play the game by relying on sound and touch. Others expressed their desire to use this game after graduation in settings where they might be employed. They also saw opportunities to modify the game to allow for more individuals to play.

The men's Paralympic Goalball Team took silver and the women's team took bronze in the last US Paralympics.

Congratulations!

The following majors passed the National Certification Exam for Therapeutic Recreation Specialists.

Mackenzie Cantwell
Aireanne Horsch
Jim Kidd
Haley Miller
Lindsey Stolte

Rec Program Design & Leadership Activities

Dr. Rick Hardy's Rec Program Design and Leadership Class planned and implemented a variety of activities for residents at Carrington Place and toddlers at The Center. The class chose an old time carnival theme for Carrington Place. Residents participated in activities such as cup staking races, cake walks, and fishing booths. Not only are these activities fun, but they provide health benefits and improve gross motor skills. The students went with an animal based theme at The Center. Activities focused on gross motor skills and educational learning. One activity involved children reaching into a black box that had pictures of animals on it. Based on what they could feel, children would try to identify which animal was inside the box. They also participated in the Jungle Ninja Circuit, which involves different movements to get through the obstacle course. The class worked with approximately 40 children who were four years old.

HHPR Happenings

HHPR Student Secretaries, Kiersten Morris and Andrea Gaddy, decorate for ***Paint the Town Red Week*** August 29th-September 2nd.

Natalie Magee & Shannon McLachlan performing at mid-term for Musical Theatre Class

Dr. Julia Spresser's Zumba Class dressed up for Halloween

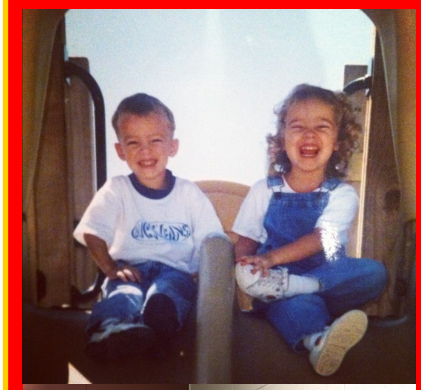
Dr. Janice Jewett's Dance Appreciation Class out in the community.

HHPR Student Secretary, Kiersten Morris (left) received her white coat at Pittsburg State University's Irene Ransom Bradley School of Nursing first annual White Coat Ceremony on Wednesday, November 9th at the Bicknell Center for the Arts. The White Coat Ceremony honors first-year nursing students as they begin their clinical education.

Seeing Double in HHPR!

HHPR Professor, Sarah Ball (left) and her twin brother, James Ball.

HHPR Professor, Mike Carper, and his Graduate Assistant, Kylie Brown being twins for the day.



HHPR Major, Brittany Shires (left) and her twin brother, Bobby Shires.

HHPR Secretary, Kiersten Morris (left) and her twin sister, Kayla Morris.

HHPR Major, Jeremy Ackerly (Right) and his twin brother, Josh Ackerly.

HHPR Professor, Shelly Rickey Grimes (left) and her twin sister, Kelly Rickey Horn.

Exercise Science News

By: Dr. Mike Carper

The Exercise Science Program has started the 2016-2017 academic year with a bang! Graduate and undergraduate students from the Exercise Science program, within the Department of Health, Human Performance, and Recreation, attended the annual Central States Chapter of the American College of Sports Medicine meeting in Fayetteville, AR on October 20-21, 2016. Both groups of students presented results from student research projects during the poster presentation session at the meeting. The students who attended the meeting were: Graduate: Kylie Brown, Nick Drake, and Scott Lester; Undergraduate: Jessica Heinz, and Ashlyn Hilton.

Four former students who worked on the projects presented were unable to attend the meeting because each is pursuing masters and/or doctoral degrees elsewhere: Josh Smeed is at Rockhurst University earning his Doctor of Physical Therapy degree; Hillary Dickey is at the University of Oklahoma earning her Doctor of Philosophy in Exercise Physiology; Richard and Jamie Sawrey are in the United Kingdom earning master's degree in Clinical Exercise Physiology and Psychology, respectively.

The students who attended the meeting were accompanied by the two Exercise Science professors, Mike Carper, Ph.D., and Derek Crawford, Ph.D. The presentations are listed below. Dr. Crawford and Dr. Carper are as busy as ever with teaching and research in both the Applied Movement Science and Applied Physiology Laboratories.

Three weeks of CrossFit® training does not contribute to overtraining syndrome in recreationally trained males: A pilot study

Derek A. Crawford, PhD[1], Joshua Smeed, BS[1], Michael J. Carper, PhD[1]

1. Department of Health, Human Performance, and Recreation; College of Education; Pittsburg State University

Background

CrossFit® (CF) is a popular, group-based high-intensity training program consisting of combined aerobic and resistance-training components designed to increase general fitness in a time efficient manner.

Despite its growing popularity and efficacy, concerns have been raised by both the popular media and academic communities about the safety of CF. With recent case studies published involving significant physical trauma related to CF participation and conditions such as rhabdomyolysis the possibility of CF training contributing to overtraining syndrome (OTS) must be elucidated. While the link between OTS and overuse injury is still debated, at best, OTS is a sign of excessive training and/or inadequate recovery, and at worst, it may be the manifestation of micro-level skeletal muscle and/or connective tissue trauma potentially leading to significant injury. Currently, OTS has not been investigated with respect to CF training practices. In the event that continuous CF training contributes to the development of OTS in healthy individuals it may provide a potential mechanism for tissue injury.

Purpose

The primary purpose of this study was to investigate if CF participation contributed to OTS, defined by alterations in physiologic, functional, biochemical, psychological, and performance outcomes in recreationally trained individuals. A secondary purpose was to determine if variables of OTS differ between CF programing based on the original methodology and what occurs in a real-world setting.

Methods

Investigators recruited recreationally trained males (n=6) who were not actively participating in CF training programs. Following pre-training testing, participants were required to complete a familiarization week where they were introduced to exercise common in CF. Immediately following the familiarization week, participants were separated into one of two training groups (either the Theoretical (TH) or Real-world (RW) groups) based on balancing demographic and performance variables. Physiologic, psychological, and performance outcomes were assessed pre-post training while functional, biochemical, and immunological outcomes were assessed at the beginning and end of each week. All statistical analysis were set at $p < .05$.

Pitt Clinical Exercise Research Laboratory

Results

Group		Session Design: Element Priority	Task Priority	Time Priority
Theoretical	Count	6	7	2
	Percent	40%	46%	13%
	Std. Residual	2.3**	0.7	-1.7
Real – World	Count	0	9	6
	Percent	0%	60%	40%
	Std. Residual	-2.3**	0.7	1.7
Total		6	16	8

Note: **denotes standardized residual greater than 2

Table 1 presents 2x2 frequency tabulation for illustrating significant differences in training session designs between TH and RW groups (χ^2=8.25; p=.016). There are significant differences for THR (F=8.63; p=.001) and RPE (F=15.26; p=.000) between training session designs. Element priority training sessions (127.4+8.9 bpm) have lower THR than both task priority (167.0+5.5; p=.001) and time priority (172.4+7.7; p=.001) designs. Element priority training sessions (9.4+0.8) also have lower associated RPEs than both task priority (14.8+0.5; p=.000) and time priority (14.7+0.7; p=.000) designs.

	Overall – Pre (MeSD)	Overall – Post (MeSD)	Time Main Effect (p-value)
Body Composition:			
Weight (kg)	84.3±5.6	83.9±5.0	.693
Body fat%	22.4±2.1	21.6±1.9	.114
Lean mass (lbs)	61.2±2.5	61.5±2.5	.702
Fat mass (kg)	19.3±2.8	18.4±2.5	.175
BMD (g/cm²)	1.18±0.1	1.19±0.1	.540
Physiological:			
Resting Heart Rate (bpm)	70.1±4.4	68.6±2.9	.477
Systolic BP (mmHg)	130.5±3.9	132.6±2.9	.618
Diastolic BP (mmHg)	78.6±3.1	82.6±1.9	.127
VO2max (mL·Kg⁻¹·min⁻¹)	52.9±4.2	50.4±3.8	.302
Anaerobic Treadmill Test Time (s)	67.8±4.3	69.0±6.6	.701
Bench Press 1RM (kg)	100.7±4.8	99.2±6.0	.542
Back Squat 1RM (kg)	121.9±4.7	125.3±3.3	.360
Profile of Mood States:			
Total Mood Disturbance	40.1±3.2	43.9±3.0	.384
Anger-Hostility	41.3±1.2	42.5±1.1	.314
Confusion-Bewilderment	48.5±1.4	49.0±1.4	.417
Depression-Dejection	41.6±0.4	42.0±0.7	.374
Fatigue-Inertia	48.0±3.3	49.1±3.3	.815
Tension-Anxiety	36.8±0.9	40.3±3.0	.147
Vigor-Activity	47.5±2.0	42.3±2.0	.088
Friendliness	49.2±1.7	42.3±1.0	.078
CF-based Performance:			
"Fight Gone Bad" (reps)	240.3±12.3	266.8±5.6	.084

Note: No significant differences ($p > .05$)

Table 2 presents the primary OTS outcome variables for pre-post intervention time points. There are no significant differences for any of the primary OTS outcome variables (all $p > .05$).

Results, cont'd

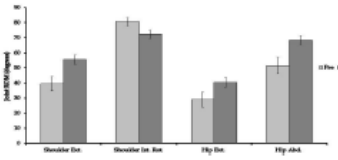


Figure 1. Pre and post-test differences for significant ROM changes

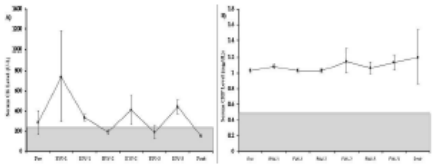


Figure 2. A) serum CK response over time B) serum CRP response over time. All values are shown as M±SD. Shaded areas represent the normal range for both variables. No significant differences ($p > .05$).

Conclusion/Future Research

The present study suggests that short-term CF participation does not contribute to the development of OTS in recreationally trained males. However, several questions still remain on the potential for where CF training may have the greatest impact on health and fitness and its implementation in practice. These questions are as follows: *1) What impact does CF have on cardiovascular function and disease risk factors; 2) Determining the value of increased work capacity outside CF (e.g. with athletic performance, injury prevention, and disability prevention); 3) What populations are most likely to value, adopt, enjoy, and maintain CF participation;* and *4) If there is the potential for injury during CF participation, investigating the potential differences between what occurs in real-world practice versus what is recommended by the original developers may provide valuable insights.*

Acknowledgement

This work was made possible by a faculty seed grant and undergraduate research assistant award provided by the Pittsburg State University *Council for Discovery and Research*.

PREDICTING MAXIMAL OXYGEN CONSUMPTION (VO_2max) FROM ANAEROBIC TREADMILL TEST TIME

Kylie J. Brown[1], Derek A. Crawford[2], and Michael J. Carper[1]

[1]Applied Physiology Laboratory and [2]Applied Movement Science Laboratory, Department of Health, Human Performance, and Recreation, Pittsburg State University, Pittsburg, KS, U.S.A.

Abstract

Background

Maximal oxygen consumption (VO_2max) testing is widely used in laboratories and requires expensive pieces of equipment. There are numerous prediction equations used to determine VO_2max, but none are based on the anaerobic treadmill test (AnTT).

Purpose

The purpose of this investigation was to develop a regression model to predict maximal oxygen consumption (VO_2max) from anaerobic treadmill test time.

Methods

A total of 30 college-aged males and females participated in this investigation. On day 1 and day 2 of testing basic anthropometric data was collected. On day 1 of testing subjects performed a VO_2max treadmill (TM) test utilizing the Bruce protocol. Subjects were properly fitted into a safety harness (SH) to ensure subjects reached volitional fatigue in safety. Subjects were fitted with a face mask connected to a metabolic cart (MMC) for collection of expired gases and determination of VO_2max. Blood pressure (BP), heart rate (HR), and RPE were recorded at rest, 30s prior to the end of each stage, and at volitional fatigue. On day 2 of testing (≥48h after day 1 testing) subjects performed an AnTT. Subjects were, again, properly fitted into the SH and fitted with a face mask connected to a MMC for determination of VO_2max. For this test the treadmill was set at a 20% grade and at a speed of 8mph. Subjects were timed with a standard stop watch from the time they began running until volitional fatigue was reached. Measures of BP and HR were recorded at rest and at termination of the test and RPE was measured at termination of the test.

Results

The mean VO_2max for the AnTT was 57.1 ml·kg^{-1}·min^{-1} and the mean VO_2max for the aerobic (Bruce) treadmill test was 58.6 ml·kg^{-1}·min^{-1}. Multiple linear regression analysis was used to develop a model for predicting VO_2max from AnTT time. The correlation between the aerobic protocol and the AnTT time was significant ($p \leq 0.003$; $r = 0.603$), thus, the regression analysis produced the following predictive model:

$$y = 37.2 + 0.38(x).$$

Table 1: Descriptive Characteristics of all subjects

Characteristic	Mean ± SD
Age, yrs	21.9 ± 1.6
Height, cm	176.3 ± 9.9
Weight, kg	76.9 ± 14.9
BMI	24.7 ± 3.2

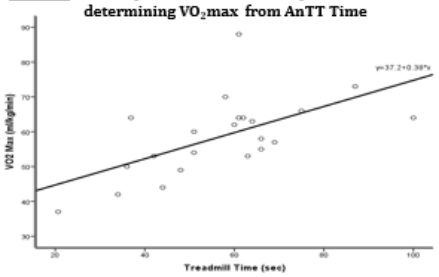
Table 2: Mean measures of exercise variables pre-, during, and post- testing (mean ± SD)

Measurement	TM	AnTT
VO2 max	54.8 ± 12.1	54.7 ± 14.5
RPE	18.1 ± 15.7	17.6 ± 1.9
RER max	1.52 ± 0.17	1.57 ± 0.31
Resting HR	69.9 ± 8.4	74.4 ± 12.6
HR max	189.6 ± 15.7	179.2 ± 11.4
Resting SBP	126.1 ± 10.1	123.6 ± 26.1
Resting DBP	79.1 ± 6.6	79.4 ± 16.9
Post-SBP	158.1 ± 23.3	151.9 ± 35.4
Post-DBP	89.3 ± 8.7	85.9 ± 18.8

Corresponding author: Michael J. Carper, mcarper@pittstate.edu

Results (cont.)

Figure 1: Scatterplot with Prediction Equation for determining VO_2max from AnTT Time



Conclusion/Future Research

Based on these results, we have demonstrated a model to predict VO_2 max from anaerobic treadmill test time. However, the data demonstrate that subjects must complete at least 30 sec on the anaerobic treadmill test for the prediction model to work effectively for the 8mph test. This VO_2max prediction equation could be used to shorten the amount of time subjects spend in the laboratory. Follow up studies are currently being conducted with variations in speed and grade and reliability studies are being conducted for the 8mph test in a similar population.

Acknowledgement

The authors would like to thank each participant of this study. We would also like to thank the many students volunteers who aided in the collection of this data, the Department of Health, Human Performance and Recreation, and Pittsburg State University for their support.

THE EPIDEMIOLOGICAL EVIDENCE OF OVERWEIGHT, OBESITY, AND CARDIOMETABOLIC DISEASE RISK FACTORS IN COLLEGE-AGED SUBJECTS: A CROSS-SECTIONAL INVESTIGATION

Hillary Dickey[1,3], Richard Sawrey[1], Jamie Sawrey[1], Jessica Heinz[1], Derek A. Crawford[2], and Michael J. Carper[1]

[1]Applied Physiology Laboratory and [2]Applied Movement Science Laboratory, Department of Health, Human Performance, and Recreation, Pittsburg State University, Pittsburg, KS, U.S.A. [3]Body Composition and Physical Performance Laboratory, Department of Health and Exercise Science, University of Oklahoma, Norman, OK, U.S.A.

Abstract

Background

As students enter into their college careers many are either not engaged in a structured exercise routine or have been previously but find other activities to occupy their time. There are scarce data investigating how the college years affect student's health and much less data on what cardiometabolic risk factors may develop during this time.

Purpose

The purpose of this 5-year cross-sectional investigation was to collect basic body composition and fitness data on college-aged males and females to determine cardiometabolic disease risk throughout the college years.

Methods

A total of 3,388 college aged males (n=1919) and females (n=1469) age 18–25yrs participated in this investigation. Subjects performed the following tests: height; weight; body composition; muscular strength and endurance; cardiopulmonary function; flexibility; waist and hip circumferences; and resting blood pressure.

Results

Females demonstrated a **significant increase**, from 18-19 yrs to 20-25 yrs, respectively, in weight, % body fat, waist and hip measurements, fat mass, BMI, diastolic blood pressure, waist-to-height ratio, and total overweight and obese status. These subjects demonstrated a **significant decrease**, from 18-19yrs to 20-25yrs, respectively, in sit-and-reach and total push-ups. **Males** demonstrated a **significant increase**, from 18-19yrs to 20-25 yrs, respectively, in weight, % body fat, waist-to-hip ratio, waist and hip measurements, waist-to-height ratio, fat mass, BMI, total overweight and obese status, diastolic blood pressure, and right and left grip strength. These subjects demonstrated a **significant decrease**, from 18-19yrs to 20-25 yrs, in sit-and-reach, total sit-ups, and total push-ups. All data was analyzed using independent sample t-tests (SPSS, v. 23; $p < 0.05$).

Corresponding author: Michael J. Carper, mcarper@pittstate.edu

Results

Table 1: Descriptive Characteristics of all subjects

Characteristic	Males (n=1919)	Females (n=1469)
Age, yrs	19.6 ± 1.6	19.2 ± 1.4*
Weight, kg	82.6 ± 19.4	68.1 ± 16.7*
Height, cm	179.9 ± 7.5	165.8 ± 7.3*
BMI	25.5 ± 5.6	24.8 ± 5.9*
Fat Mass, kg	14.7 ± 12.4	21.0 ± 11.7*
Fat-free Mass, kg	66.9 ± 10.6	47.9 ± 9.2*
SBP	129.1 ± 14.7	121.2 ± 13.7*
DBP	77.7 ± 9.9	76.1 ± 9.6*
WtHR	0.50 ± 0.1	0.50 ± 0.1
Body Fat, %	16.1 ± 8.9	28.6 ± 9.5*
Waist, cm	87.3 ± 14.8	81.3 ± 14.4*
Hip, cm	38.8 ± 4.8	37.9 ± 5.2*
WHR	0.89 ± 0.08	0.85± 0.10*
Sit/Reach, cm	36.4 ± 14.6	38.7 ± 13.6*
R Grip Strength, kg	49.8 ± 10.6	31.7 ± 13.7*
L Grip Strength, kg	47.5 ± 10.3	29.6 ± 9.9*
Sit-ups	52.1 ± 18.6	46.2 ± 19.2*
Push-ups	33.0 ± 16.2	14.7 ± 9.7*
HR Recovery, bpm	114.4 ± 21.4	121.7 ± 20.9*

Table 2: Between group differences for females

Characteristic	18-19yrs	20-25yrs
Weight, kg	67.1 ± 15.2	70.8 ± 19.6*
Height, cm	165.9 ± 7.0	165.5 ± 7.8
BMI	24.4 ± 5.3	25.8 ± 6.9
Fat Mass, kg	19.9 ± 10.3	24.3 ± 14.7*
Fat-free Mass, kg	47.9 ± 9.9	47.9± 6.5
SBP	121.1 ± 13.4	121.4 ± 14.2
DBP	75.8 ± 9.8	77.4 ± 10.9*
WtHR	0.48 ± 0.1	0.50 ± 0.1
Body Fat, %	27.9 ± 8.9	30.4 ± 10.5*
Waist, cm	80.4 ± 12.9	83.4 ± 16.1*
Hip, cm	95.1 ± 12.4	98.9 ± 5.9*
WHR	0.85 ± 0.1	0.84± 0.1
Sit/Reach, cm	39.4 ± 14.9	37.1 ± 9.7*
R Grip Strength, kg	31.8 ± 15.5	31.4 ± 7.8
L Grip Strength, kg	29.7 ± 10.8	29.4 ± 7.3
Sit-ups	46.4 ± 20.3	45.7 ± 16.1
Push-ups	15.3 ± 9.8	13.3 ± 9.5*
HR Recovery, bpm	120.9 ± 20.7	123.1 ± 21.3

Results (cont.)

Table 3: Between group differences for Males

Characteristic	18-19yrs	20-25yrs
Weight, kg	80.9 ± 18.5	85.3 ± 20.5*
Height, cm	179.8 ± 7.4	180.1 ± 7.6
BMI	25.1 ± 5.3	26.3 ± 5.9*
Fat Mass, kg	13.4 ± 11.2	17.1 ± 13.9*
Fat-free Mass, kg	66.5 ± 10.8	67.5± 10.2
SBP	128.6 ± 14.5	129.9 ± 14.8
DBP	76.7 ± 9.8	79.3 ± 10.1*
WtHR	0.48 ± 0.08	0.50 ± 0.08*
Body Fat, %	15.1 ± 8.5	17.6 ± 9.4*
Waist, cm	86.1 ± 14.7	89.4 ± 14.7*
Hip, cm	97.5 ± 13.9	99.7 ± 11.7*
WHR	0.88 ± 0.08	0.90± 0.08*
Sit/Reach, cm	36.9 ± 16.4	35.5 ± 10.9*
R Grip Strength, kg	49.1 ± 10.1	51.1 ± 11.3*
L Grip Strength, kg	46.9 ± 9.8	48.3 ± 10.8*
Sit-ups	52.7 ± 19.1	50.9 ± 17.8*
Push-ups	33.6 ± 15.8	32.1 ± 16.7*
HR Recovery, bpm	114.2 ± 20.9	115.1 ± 21.8

Conclusion/Future Research

Based on the results of this 5-year cross-sectional investigation, we have demonstrated that as college-aged males and females continue through their academic careers there is a continuous decline in basic health and fitness outcomes that may lead to the development of morbid/co-morbid conditions and the development of cardiometabolic diseases such as diabetes, hypertension, cardiovascular disease, and increased early mortality.

Acknowledgement

The authors would like to thank each participant of this study. We would also like to thank the many students volunteers who aided in the collection of this enormous amount of data, the Department of Health, Human Performance and Recreation, and Pittsburg State University for their support.

THE EFFECTS OF ACUTE NIACIN SUPPLEMENTATION ON RESTING HEART RATE AND BLOOD PRESSURE IN COLLEGE-AGED MALES

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*Authors contributed equally to the study

Abstract

Background

Niacin is a common ingredient in many sports and energy drinks. Niacin has been shown to have a vasodilation effect when taken orally. As with many supplements that are advertised as increasing athletic performance, student- and recreational-athletes will inevitably try these products in an attempt to gain an edge during performance.

Purpose

The purpose of this investigation was to determine the effects of acute niacin supplementation on measures of resting heart rate and blood pressure in college-aged males.

Methods

A total of 30 college-aged males participated in this investigation. Subjects reported to the laboratory for pre-test measurements of height, weight, and body composition. Subjects were then instructed to either sit or lay down for 15 min to stabilize HR and BP to a resting state. Following the stabilizing period resting HR and BP were obtained. Subjects then consumed an oral dose of 1000mg of a commercially available niacin (nicotinic acid) supplement. Subjects were then instructed to remain seated and inactive for 90 min. HR and BP were then recorded every 10 min. If any adverse side effects were noticed, subjects were instructed to go immediately to the student health center or their primary care physician for consultation.

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Results

Resting systolic blood pressure (mmHg) was significantly decreased from baseline (124.7±11.9) at 30 min (120.6±10.5), 40 min (120.3±12.7), 50 min (120.8±14.9), 60 min (119.3±12.4), 70 min (117.9±12.6), 80 min (118.5±11.9, and 90 min (119.4±8.9) post-consumption. Resting diastolic blood pressure (mmHg) was significantly decreased from baseline (77.8±9.1) at 20 min (75.8±7.4) and at 80 min (74.7±10.8) post-consumption. Resting heart rate (bpm) was significantly decreased from baseline (71.3±11.3) at 20 min (67.5±12.2), 30 min (68.2±13.2), 40 min (66.7±12.5), 50 min (65.7±12.5), 60 min (66.2±11.4), 70 min (67.8±11.6) and 90 min (67.8±12.6) post-consumption

Table 1: Descriptive Characteristics of all subjects

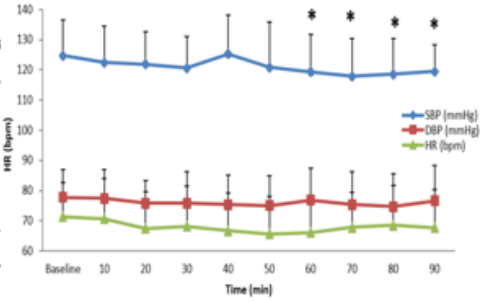
Characteristic	Mean ± SD
Age, yrs	22 ± 1.2
Height, cm	179.2 ± 10.4
Weight, kg	89.9 ± 16.6
Body Fat, %	20.9 ± 9.5

Table 2: Changes in SBP, DBP, and HR for 90min following supplementation (mean ± SD)

Time	SBP	DBP	HR
Baseline	124.7 ± 11.9	77.8 ± 9.1	71.3 ± 11.3
10min	122.4 ± 12.1	77.4 ± 9.6	70.7 ± 13.2
20min	121.9 ± 10.7	75.8 ± 7.4	67.5 ± 12.2
30min	120.6 ± 10.6	75.8 ± 10.4	68.2 ± 13.2
40min	125.3 ± 12.8	75.4 ± 9.7	66.8 ± 12.5
50min	120.9 ± 14.9	75.1 ± 9.8	65.7 ± 12.5
60min	119.3 ± 12.4*	76.9 ± 10.6	66.2 ± 11.4
70min	117.9 ± 12.6*	75.3 ± 10.9	67.8 ± 11.6
80min	118.5 ± 11.9*	74.7 ± 10.9	68.6 ± 13.2
90min	119.4 ± 8.9*	76.7 ± 11.8	67.8 ± 12.6

Results (cont.)

Figure 1: Changes in SBP, DBP, and HR for 90min following supplementation



Conclusion/Future Research

Based on the results of this investigation we have demonstrated that acute niacin supplementation of 1000mg significantly decreased resting systolic and diastolic blood pressure, and resting heart rate post-consumption. Follow up experiments are focused on the effects of niacin supplementation on pre-exercise, exercise, and post-exercise blood pressure and heart rate, in a cross-over fashion, in college-aged recreational athletes.

Acknowledgement

The authors would like to thank each participant of this study. We would also like to thank the many students volunteers who aided in the collection of this data, the Department of Health, Human Performance and Recreation, and Pittsburg State University for their support.

Campus Recreation Graduate Update

Campus Recreation offers a wide-variety of recreational activities for PSU students. Campus Recreation Director Vince Daino (PSU 95) and Associate Director Steve Lilly (PSU 09) also train graduate assistants for careers in campus recreation. Since its inception in 2008, the Department of Campus Recreation has had 11 graduate assistants. Listed below are some of the former graduate assistants currently working in the campus recreation/fitness domain:

- Steven Lilly (09) Pittsburg State - Associate Director of Campus Recreation
- Adam Walsh (10) Colorado State University - Assistant Director Intramural Sports
- Andy Albright (11) Chanute School District - PE Teacher/Head Wrestling Coach
- DePrice Taylor (12) Area Director Greater Jackson County Boys and Girls Club, Kansas City, MO
- Adam Gault (12) Director of Training at Life Time Fitness, Austin, TX
- Tyler Artley (14) Northeast Lake Village Community College - Intramural Specialist, San Antonio, TX
- Kevin Obungu (14) Pittsburg State University - Administrative Specialist Campus Recreation
- John Tricks (15) Arizona State - Program Coordinator for Fitness (Responsible for managing staff and programs at all four ASU Campuses in the greater Phoenix area)
- Alex Lee (16) Central Washington University - Coordinator of Summer Camps and Sport Clubs

Pittsburg Christmas Parade

Dr. Jewett's Dance Appreciation students performed in the 37th Annual Pittsburg Christmas Parade on November 28th.

Congratulations to our Graduates!

Certificate in Dance

Jamera Allen
Taylor Brumbaugh

Exercise Science

Sunny Henson
Devin Linenbrink
Lucas Mapes
Mitchell Ramsey

Graduate Students

Terence Coleman
Elbert Fulgham III
Jason Hall
Joshua Harris
Katie Kollath
Luke Miller
Kyle Murphy
Nicholas Perez
Shawn Pitcher
Ashley Welch

Physical Education

Kae Lani Bryan
Catherine Cummins
Michael Haynes
Bradley Hefley
Jake Hess
Hunter Keith
Travis Kyte
Elaina Lawson
Franklin Merrick
Ryan Metcalf
Alexis Scheibler
Matthew Storrer
Karl Wicker

Recreation

Vickie Aldridge
Taylor Brumbaugh
Mackenzie Cantwell
Xavier Coleman
Haley Connell
Amber Davish
Sarah Demaree
Kevin Tackett

HHPR's Student Employee - Andrea Gaddy (Psychology)

A special THANKS to those who gifted the HHPR Endowment

Bob Aherens

Mr. and Mrs. John Allen

James and Marilyn Barrows

Ron and Susan Downing

Patrick and Stephanie Forbes

Stephen Foster

Jack and Jean Gilmore

Scott and Beth Gorman

Michelle Grimes

Richard and Stephanie Grinage

Rob Hefley

Rick and Cheryle Moore

John and Kathy Oppliger

Pamela and Guy Owings

Duane Rankin

Cole and Jennifer Shewmake

Marian Simpson

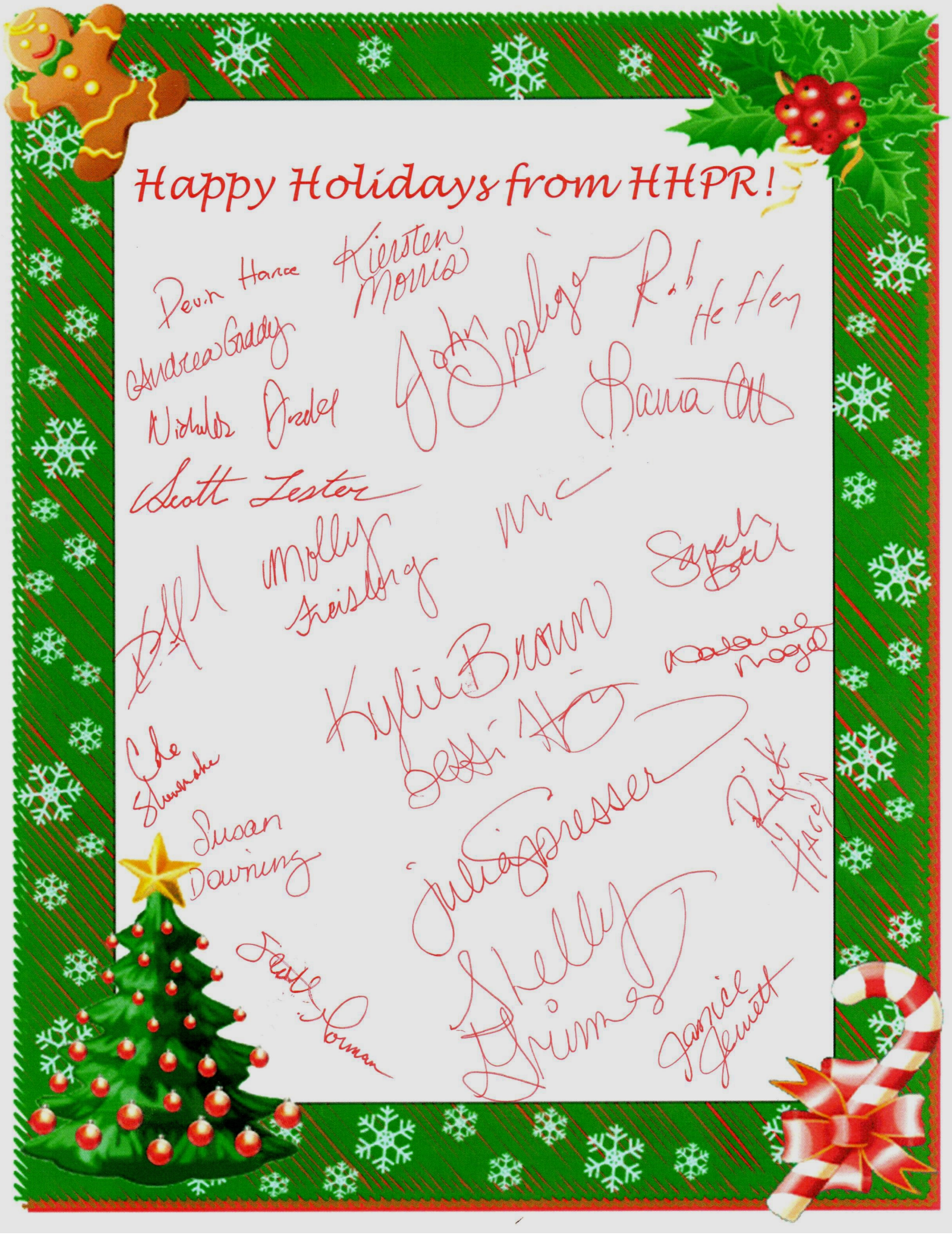
Michael and Jo Slaughter

Janie Terry

Gary Thompson

Madelyn Troutman

Products Plus Incorporated (Tommy Ayers, Owner)


Happy Holidays from HHPR!