



FACULTY

- Dr. John Oppliger, Chair
- Ms. Sarah Ball
- Dr. Mike Carper
- Dr. Laura Covert
- Dr. Derek Crawford
- Dr. Scott Gorman
- Ms. Shelly Grimes
- Dr. Ricky Hardy
- Dr. Rob Hefley
- Dr. Janice Jewett
- Dr. Cole Shewmake
- Dr. Julia Spreser

GRADUATE ASSISTANTS

- Mr. Nick Drake
- Ms. Brittany Thomas
- Mrs. Katherine Pinto
- Mrs. Chelsey Powell-Davenport
- Ms. Samantha Way
- Mr. Dreu White

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Pittsburg State University

Health, Human Performance, and Recreation

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KAYLAH AILES, AND RILEY AIKEN

HHPR Online Masters Program Ranked Nationally

The Master of Science Degree in the HHPR Department received national ranking in October. The online Sport & Leisure Service Management Emphasis was ranked 4th in the nation among the 2018 Most Affordable Online Colleges for Master's in Sports Management by SR Education Group. Since 2009, this group has published rankings of online college. After manually researching every college offering an online degree, rankings of the most affordable colleges are determined.

The degree boasts 11 faculty holding terminal degrees in the area of recreation and sport, therapeutic recreation, hospitality, health promotion, education, athletic coaching, exercise science and rehabilitation medicine.

Dr. R. Scott Gorman serves as graduate coordinator and Dr. John Oppliger serves as department chairperson.



Notable recent graduates from this emphasis area include :
Steven Lilly – Associate Director of Campus Recreation @ PSU
Elena Lovato – Head women's basketball coach at University of Arkansas (Fort Smith)
Mica Rosenow – Joplin business owner & doctoral student

Chair's Message

Dr. John Oppliger



Happy Holidays and welcome to the fall 2017 edition of the Health, Human Performance and Recreation (HHPR) Newsletter. Busy has been the name of the game around here, but we would not want it any other way. As usual, the students and faculty have been quite busy since the last newsletter and continue to be engaged in activities which make us all look good. The attention the department receives is a source of pride and makes everyone want to perpetuate the outstanding reputation the department has earned over the years.

A prime example of such attention is the department's Master of Science Degree in Health, Human Performance, and Recreation. The Sport and Leisure Service Management emphasis was recently ranked 4th in the nation among the 2018 Most Affordable Online Master's programs. All faculty teach in the graduate program, which is coordinated by Dr. Scott Gorman.

This issue details the numerous accomplishments of our students. In October, at the annual convention of the Kansas Association for Health, Physical Education, Recreation, and Dance (KAHPERD), held at Washburn University in Topeka, our students won both the Certificate of Attendance and Certificate of Membership Awards. A variety of HHPR majors attended this convention and winning these awards was quite an accomplishment when considering the number of institutions of higher education in Kansas. Students attended and presented at the American College of Sports Medicine, Central States Chapter meeting in St. Louis as well. In addition, plans are being made for our students to attend the Kansas Recreation and Park Association Conference and Trade Show in Wichita this upcoming January.

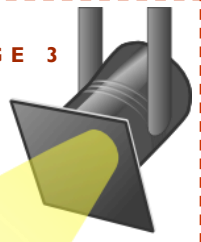
Students from physical education, recreation, and exercise science have represented their disciplines very well. Our minor in dance continues to gain popularity and attract students from other majors who desire to complete the dance minor in order to complement their majors. Dr. Jewett coordinates the dance program, which has been complemented by graduate assistant Chelsey Powell-Davenport and last year's graduate assistant Natalie Magee. Both of these students have strong backgrounds in dance.

Also included in this issue is the Alumni Spotlight, HHPR Happenings and photos from the numerous events in which the department has been engaged. We know readers enjoy photos and Ms. Sarah Ball has been instrumental in keeping us modern in the world of social media. Please check us out on Facebook at *Pittsburg State, Health, Human Performance and Recreation* and follow us on Instagram [@pittstatehhpr](https://www.instagram.com/pittstatehhpr)

Finally, the department expresses thanks 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

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Michelle Nottingham Alexander

Michelle (Nottingham) Alexander is currently the department manager for Johnson County Park and Recreation District's (JCPRD) 50 Plus Program in the KC Metro area. The 50 Plus Program is responsible for providing leisure services for older adults across Johnson County, KS. The 50 Plus Program is truly looked to as a leader across the country for the programs and services we provide. Michelle oversees a department of nine full time and one part time staff that are dedicated to improving the quality of life to the older adults in our community. It is rare to find an organization that supports so many staff to focus on this demographic.

The department was established approximately 40 years ago and Michelle has been with the department for the past 19. Shortly after graduating from Pittsburg State with her BS in Recreation Administration she landed a position as a Recreation Coordinator with JCPRD at their Olathe 50 Plus office responsible for programming aquatics and sports. Over the years Michelle has moved around and up within the department and now leads her team that offer approximately 1000 programs to around 15,000 participants every year.

Working with older adults was not a demographic she ever pursued or focused on serving but found it to be extremely rewarding and a great fit. Creating opportunities for older adults to connect with their community, build friendships, learn a new skill, maintain or improve their wellness, and provide a source of enjoyment has become a passion for Michelle. She strives to combat the loneliness that so many of the older adults in our area face by keeping them engaged in our community.

Programs span from basic bridge lessons, computer classes, art programs, pickleball, special events, nature walks/hikes, daytrips, extended travel, and much more. Some of her favorite experiences have been helping build their New Horizons Band program from a small group of 12 to a strong presence of 60 band members that range in age from their younger 50's up to their mid 80's. This cooperative program was built through a partnership with UMKC's Conservatory of Music and Dance in 2005. It is an intergenerational program that brings together college students that are completing their doctorates alongside their elders. It is a learning opportunity enjoyed by all.

One opportunity Michelle never dreamed she would realize is the chance to travel the world. With their extended travel program she serves as a chaperone on the group tours they offer a few times every year. While on the tours Michelle captures the group's experiences through photos and a written journal. Many on the tours travel alone so the staff escorting the tour helps arrange group dinners and outings on free days encouraging those alone to join together. Many of the travelers feel a sense of security when staff travel with them as well. Over the past three years Michelle has traveled to Rome and the stunningly beautiful Amalfi Coast in Italy, experienced the crazy strong winds atop the Cliffs of Mohr and then kissed the Blarney Stone in Ireland, journeyed across Eastern Canada, skied the Matterhorn in Zermatt, Switzerland, rode the world's fastest roller coaster and walked through the Grand Mosque in Abu Dhabi, and ate dinner in a restaurant that has been serving meals since 800AD in Salzburg, Austria.

Michelle has also recently been involved with a core group of people in the KC Metro area that are also dedicated to the field of aging and started the Age Positive Conference in 2016. The conference is supported by MARC's (Mid America Regional Council) KC Communities for All Ages and is an opportunity for front line staff that serve in the field of aging to gain leadership skills, programming ideas, and more. It is a low cost one day conference includes many sessions that are led by local experts. This local speaker aspect helps keep us all connected to resources available in the area. The more resources we are all aware of the better informed we are to serve our patrons. Whether it is traveling the world, listening to a concert by one of the performing groups, or watching her team receive sincere thanks from patrons for the amazing event they just hosted Michelle realizes she is incredibly blessed to be where she is. JCPRD has become her home away from home. It is an environment where she has always been able to be creative, to take risks, to lead from where she was, and supported from every direction. She is grateful for the growth and opportunity she continues to realize at the organization as part of their Recreation Management Team.

None of this would have happened had her fellow PSU Dance Team Member, Dani Rich, not introduced her to the HPER Department after deciding Elementary Ed was not the path she wanted to pursue. From there the faculty and staff opened her eyes to a profession she never knew could be such a rewarding career path that is full of hard working and passionate individuals. Michelle remembers watching the video in one of her rec classes that was JCPRD's submission for the National Park and Recreation Association Gold Medal Award which they won in 1995. Michelle attended the NRPA conference in 2017 when JCPRD again won the Gold Medal as the Best Park & Recreation Agency in the Nation! It has come full circle! Without the enthusiasm and dedication the PSU faculty and staff has to the profession this story may have never been. Proud to be a Gorilla! **GO PITT!**

HHPR Graduate Assistants 2017-2018



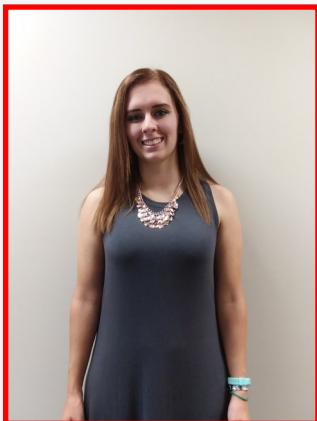
Katherine Pinto
Exercise Science



Nick Drake
Exercise Science



Chelsey Powell-Davenport
Dance



Brittany Thomas
Recreation

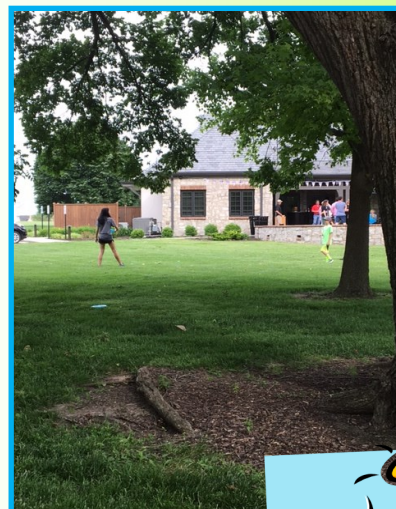


Samantha Way
Physical Education



Dreu White
Exercise Science

Picnic with the President



President Scott hosted a picnic at Campus Lake following the Spring 2017 semester.. **Ms. Shelly Grimes**, **Ms. Sarah Ball**, and **Dr. Rick Hardy** offered canoeing and outdoor games for everyone on behalf of the department.

Summer Camping Class Teaches Archery



Dr. Gorman's Camping Class collaborated with area Girl Scouts to teach archery. The class created targets for the girls to practice on. **Ms. Sarah Ball** also assisted throughout the day.



Summertime

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Three of our Dance Minor Students attended Stage One Dance Nationals in Branson, MO. Over 40 studios competed in this national competition. They took approximately 65 dancers from the Pittsburg area to compete.

The students are from left to right:

Corrie Belton (current student minoring in Dance)
Gracie Spencer (May 2017 graduate with Minor in Dance)

Taylor Brumbaugh (December 2016 graduate with Bachelors in Recreation and Minor in Dance)

All three students are currently employed by the Y Academy of Dance in Pittsburg.



Congratulations!

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

*Kaylene Amatya
Amber Davish*



Britta Hess (Exercise Science) was accepted to PT School at Missouri State in Springfield.

Jacob Guiot, Summer 2017 Recreation graduate, accepted a Park Ranger position with Arkansas State Parks.

August & September



Paint The Town Red Theme: Gus Wild West



HHPR Student Secretaries

(Left to Right): Kiersten Morris, Riley Aiken, Kaylah Ailes



HHPR Fitness/Aquatic Instructors

Front row (left to right): Riley Gordon, Idalis Bird, Shelly Grimes
(Fitness/Aquatics Director), Julia Sprester (HHPR professor)

Second row (left to right): Sarah Ball, (HHPR professor) Isabella Libel,
Teale Mckinzie, Alaina Purdon

Top row (left to right): Haley Smith and Bailey Cummins.

Not pictured: Kendyl Vandervoort, Kristi Murphy,
Sgt. Eric Hollingsworth

Eclipse Watching



Not a cloud in the sky on August 21st as
HHPR faculty and staff gathered outside to
watch the solar eclipse!

Recreation Students Volunteer at the 26th Annual President's Society Dinner

Students from Sarah Ball's and Scott Gorman's Recreation classes were on hand for the President's Society Dinner on Friday, September 15th from 6:00-8:00 in the Plaster Center. The students were dressed in 1903 era British clothes courtesy of the PSU Theatre Department. Over 200 major donors were in attendance for the dinner, but socialized beforehand and this year's theme was "A British Garden" with yard games played such as bocce, croquet, and badminton.



Pictured (left to right): George Palestino, Joshua Watson, Zach Denton, Ashley Ramos, Christine Younker, Sarah Berntsen, Kylee Smith, Aubrey Vena, Kara Cicero, Jordan Nelson, Garek Peters, Tyler Wright, Cole Brecheisen



Homecoming 2017



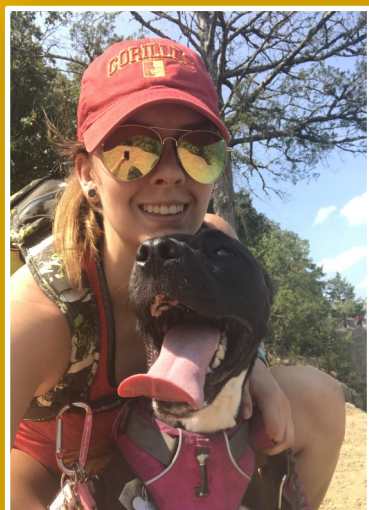
Two of our students were nominated as Queen Candidates for Homecoming. (Top Left) Brooke Wells-Lee was representing the HHPR Club and (Left) Quinn Morris was representing the Dance Club. Our Tennis Instructor (Above), Kaylin Lake, rode the Lambda Chi Alpha float.

Congratulations, Ladies!



HHPR Club and Dance Club Students sailed their rafts on the University Lake during the Homecoming festivities. HHPR Club got 5th place!

Fall Break



HHPR GA, Brittany Thomas, went on a hike with her dog, Roxy, over Fall Break at Devil's Den State Park in Arkansas.



HHPR Student Secretary, Riley Aiken, went rock climbing at Lincoln Lake in Arkansas with pup, Heidi.



HHPR GA, Katherine, Coulombe, got married! Congrats Mrs. Pinto!



HHPR Student Secretary, Kaylah Ailes, (far left) went to Dallas, TX with her boyfriend, Dusty, and two international students: (Chen, from Finland/China and Tera, from Taiwan). They are pictured at the Botanical Garden.



HHPR Happenings

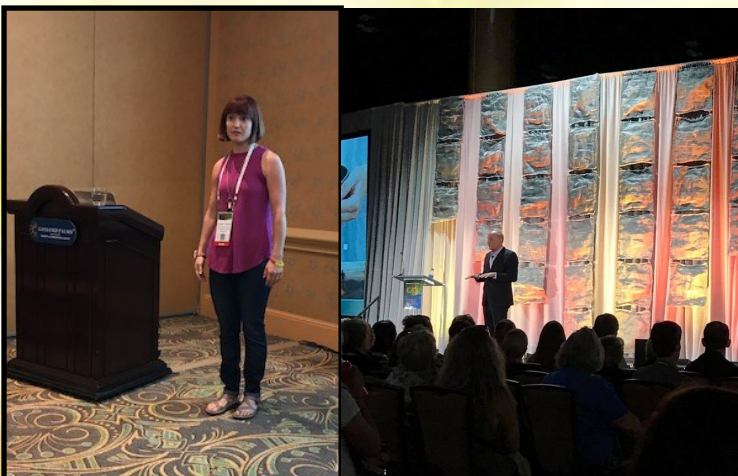
- **Dr. Jewett's Dance Appreciation** class visited Lakeside Elementary on Thursday, October 12th as part of Dance Sharing Day. The class worked with approximately 23 5th graders, teaching the Western Swing.
- **Dr. Jewett's Dance Appreciation** class visited Via Christi Village on Thursday, November 9th as part of Dance Sharing Day. The class performed for the residents there, performing dances such as the East Coast Swing.
- **Dr. Spresser** attended Peggy Kramer's presentation, "Nutrition 101—Power of Protein" on October 18, 2017. Peggy is a registered Dietician & works for Girard Medical Center.
- **Dr. Hardy** was asked to serve on the Gorilla Advising Academy Council for the University. He was also one of four faculty/staff from PSU chosen to attend a national workshop on grant writing.
- **Dr. Hardy** published an article in the KAHPERD Journal fall edition on bicycling on Pump Tracks. He gave an individual presentation and a group presentation at the KAHPERD Conference. The individual presentation was *"Develop & Grow Your Professional Brand."* Basically a presentation for students and young professionals to create and control the image they project as a professional. The group presentation was on *"Recreation... Make it a Family Thing"* with **Ms. Sarah Ball** and **Dr. John Oppliger**. It covered building family bonds through recreating together.



Dr. Scott Gorman's Camping Class was able to get outside and enjoy some November weather by playing Bocce Ball.



Dr. Julia Spresser was nominated as "Professor of the Month" by GLC (Greek Leadership Council) by Katy Pitts.



Dr. Laura Covert (left) presented and attended the International Council for Active Aging conference October 12-14 in Orlando, Florida. Among speakers at the conference was the 17th Surgeon General of the United States Dr. Richard Carmona (right).



Dr. Julia Spresser's Intro to PE class played games for the unique student.



KAHPERD Convention October 25-27—Topeka, KS Washburn University

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KAHPERD Awards



HHPR GA, Nick Drake,
won the Graduate
Student Major for Research
Award.



Lucas Arnold won the
Recreation Major of the
Year Award.



Brooke Wells-Lee won the
Physical Education Major
of the Year Award.

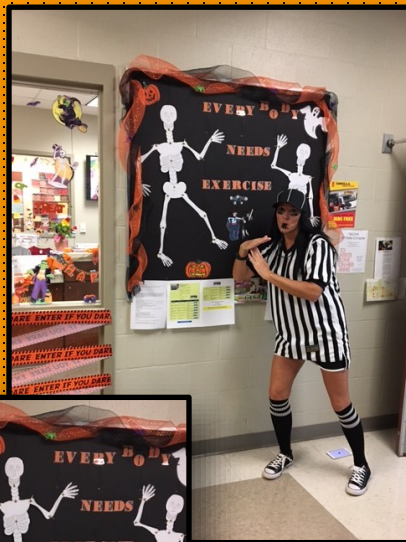
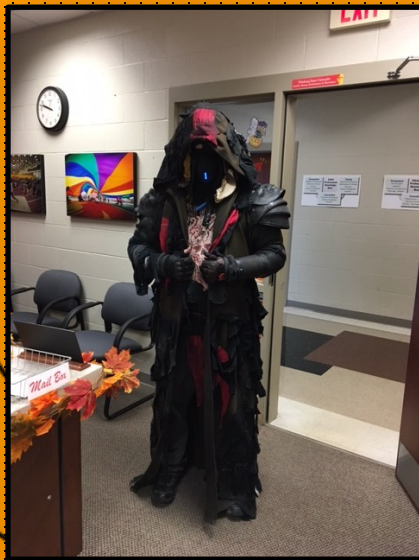
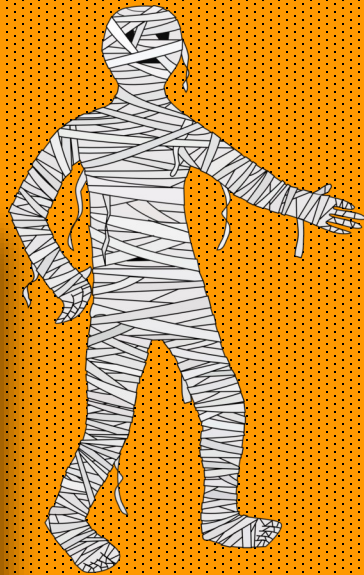
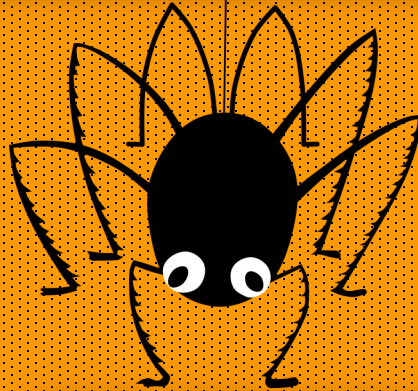


PSU won the Highest Number of University
Students in Attendance Award.

PSU won the Highest Number of Student
KAHPERD Members Award.



HALLOWEEN



PE News



Pictured: Jake Thompson (PE) spotting handstands activity for Theories III.

On September 14 and 21, Theories of Fundamentals III students taught basic tumbling skills to 1st graders at Westside Elementary School. First grade students learned how to do forward and backward rolls, handstands, headstands, and cartwheels. PE teacher, Veronica Ausemus, complimented the students on their personalized teaching style and enthusiasm.



Pictured: Madison Morgan (PE) takes a moment to smile with her 1st grade buddy.

Mrs. Pam Owings (pictured right) presented games & activities for Intro to PE students on October 9th. They learned how to play dice fitness games to promote math & fitness skills. They also learned how to play chicken soup & build hula hoop castles. Thanks Mrs. Owings for sharing your wonderful expertise!



Intro to Physical Education students visited Westside Elementary school on October 4th. They played Monkey in the Middle, Balloon Toss, & Soccer Castles with Mrs. Ausemus' Kindergarteners.

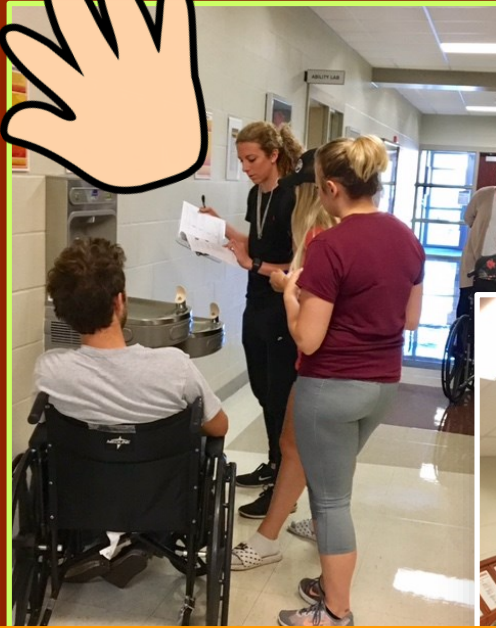


A 20 year search ends! HHPR faculty member, Dr. Rob Hefley, finally found a foul pole indicator after a 20 year search. These poles let the fans know by electronic signal how many fouls a player had during a basketball game which helped avoid crowd controversy during games. They were in virtually every gym in the world for about twenty years from the mid 1960's to the mid '80's from high schools, universities, and the NBA. Foul numbers then went to the score boards making them obsolete and they virtually disappeared from the earth it seemed. But persistence in finding one paid off however and Dr. Hefley is proudly displaying his in his "mancave" at home after he kindly shared this piece of sport history with the HHPR Department!

Our Students Learn Best By Doing!

Recreation

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Ms. Ball's Intro to Therapeutic Recreation students participating in a built environment accessibility activity using Americans with Disabilities Act checklists.



Rec Therapeutic Interventions for Older Adults students doing icebreaker activities with residents they will be implementing therapeutic interventions with for six weeks! (Right)



Ms. Ball's Rec 280 Class playing blanket volleyball



Dr. Covert's Assessment and Documentation in TR class at Highland Meadows



Dance



Dr. Jewett's Dance
Appreciation Class
teaching 5th Graders
at George Nettles
Elementary School.



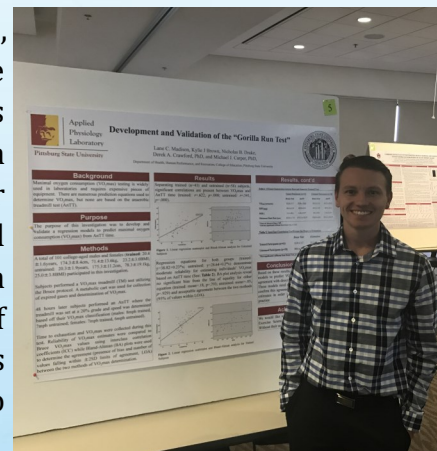
Dr. Jewett's Dance
Appreciation Class
performing for
residents at
Carrington Residential
Care Center



Exercise Science News

It has been another great year in the Exercise Science program! We had 22 students graduate following the spring 2017 semester. Of those students five were accepted into Doctoral programs in Physical Therapy; two will be pursuing their degrees as chiropractors; and three remained at Pittsburg State to earn their master's degrees in HHPR. Other students will be pursuing careers in veterinarian medicine, education, corporate wellness, physician's assistant programs, physical therapy assistant programs, and operating personal training businesses. The program had one student complete an internship in strength and conditioning at Texas Christian University during the summer 2017.

With help from the College of Education and the Department of Health, Human Performance, and Recreation, new equipment was purchased for the Applied Physiology Laboratory. These new pieces of equipment are used as teaching tools in all courses within the program. The new equipment includes: a Monark Peak Bike which helps students learn the importance of maximal power output; Kaatsu blood flow restriction device to instruct students on how blood flow, or restricted flow, to exercising muscles aids in recovery; Chattanooga electrical stimulation/ultra sound device used to instruct students on the use of electrical stimulation for recovery following exercise; and a ParvoMedics TrueOne® 2400 Metabolic Measurement System used to teach students how to measure maximal oxygen consumption during maximal exercise.



As of the fall 2017 semester, we have three students who have gained early acceptance into Doctoral programs in Physical Therapy and one student accepted into an out-of-state nursing program. We are expecting more students to be accepted into Doctor of Physical Therapy programs and/or other graduate programs in the near future. In October, Dr. Derek Crawford accompanied two graduate students and one undergraduate student to the Central States Chapter of the American College of Sports Medicine regional meeting in St. Louis, MO. The students presented their original research projects during the poster presentation session at the meeting. In addition, Dr. Crawford co-presented a talk alongside a colleague from Kansas State University over a multi-site project investigating the use of high intensity functional training as a modality in certain disease states. One of our graduate students, Nick Drake, just completed data collection for his Master's thesis project. Because the application and dissemination of information and knowledge is vitally important in life, our program is becoming more focused on using research projects as teaching tools that allow students the opportunity to put into practice the information they learn in the classroom. This has been the goal of the program since its inception and now we are seeing the fruits of our labor. Dr. Crawford and Dr. Carper are currently working with undergraduate students on preparing four manuscripts for publication. These manuscripts are a direct result of undergraduate research projects that have come to an end.



This is the beginning of the 7th year of the Exercise Science program and we continue to see growth; we have approximately 176 majors and 30 minors in the program. Our class sizes fluctuate, as is expected, but remain around 20-25 students per class. These smaller class sizes allow us to interact more with the students and allow us the ability to tailor those courses to the student's needs. We are currently having discussions regarding the addition of courses to the program in the near future. These discussions are a direct result of conversations we have had with graduates (alumni) of our program, specifically those who have earned or who are earning their doctorate degrees. The program is, and always has been, a very dynamic program; in that, we will take on the challenge of adding necessary courses if it is what our students need to be successful in the future.



Applied
Physiology
Laboratory

Pittsburgh State University

Perceived Exertion as a Monitoring Strategy During CrossFit®: Useful or Useless?

Nicholas B. Drake, BS, Michael J. Carper, PhD, and Derek A. Crawford, PhD

Department of Health, Human Performance, and Recreation; College of Education; Pittsburgh State University



Background

Facing harsh criticism of potentially causing injury, CrossFit® (CF) may benefit from the inclusion of appropriate monitoring strategies. Rate of perceived exertion (RPE) is a monitoring strategy commonly used for both quantification and modulation of workloads during exercise and sports training. Despite its widespread use in CF investigations, the validity of RPE as a monitoring strategy in CF training remains untested.

Purpose

To assess the validity of RPE as a monitoring strategy during CF training.

Methods

Six males (height, 182.5 ± 8.6 cm; weight, 84.3 ± 12.4 kg; and age, 25.0 ± 5.4 years) participated in three weeks (5 days/week) of CF training.

Following each training session, session RPE (sRPE), workout duration (Dura), and immediate post-exercise heart rate (THR) were recorded. Dura and THR were used to quantify the workload (tWL) for each session. Means for RPE, Dura, THR, and tWL were calculated for week 1 and week 3 of training. The Profile of Mood States (POMS) questionnaire was administered pre-week 1 and post-week 3.

A repeated measures MANOVA with Tukey post-hoc adjustments was used to assess differences in training session variables between weeks 1 and 3. Linear regression of mean RPE and WL were compared between weeks 1 and 3. POMS outcomes were compared between weeks 1 and 3 using magnitude-based inferences of each subscale's minimum clinically important difference (MCID).

Results

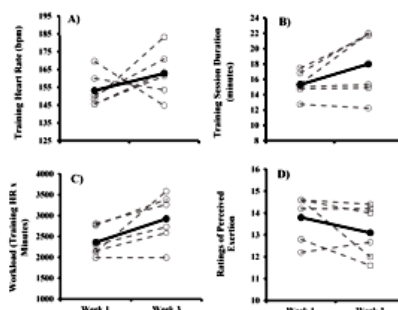


Figure 1. A) Training heart rate between week 1 and 3 B) Training session duration between week 1 and 3 C) Training workload between week 1 and 3 D) Session rating of perceived exertion between week 1 and 3.

*Individual lines represent mean change for the group between week 1 and 3. Standard lines represent mean change for each participant between week 1 and 3.

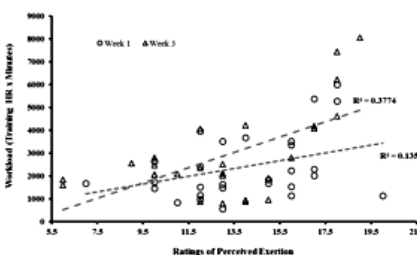


Figure 2. Scatterplot of training workload versus session ratings of perceived exertion

Results, cont'd

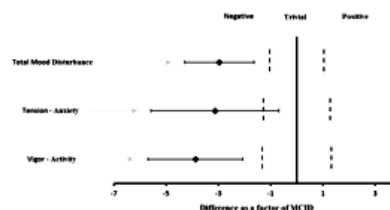


Figure 3. Meaningful changes in mood states

*Standard lines represent individual MCID for each POMS subscale. Error bars represent the 95% confidence interval for each factor of MCID.

Conclusion/Future Research

This study highlights sRPE as a valid method for monitoring exercise intensities during CF training. However, there are some issues concerning when it becomes a valid tool and if it may be sensitive enough to detect early signs of maladaptation. The incorporation of an acclimation phase prior to the use of sRPE as a monitoring tool may be necessary as participants could initially overestimate their level of effort. While the present study cannot address if participants reached a state of OR, the negative perturbations in mood states suggest it could be a possibility. Future research should look to determine if negative changes in performance, during periods of intensified CF training, are reflected in participants' sRPE once they have acclimated to this training modality. Further, practitioners are encouraged to incorporate periodic benchmark WODs to serve as a metric of CF performance in addition to monitoring tWL and sRPE to determine if participants enter a state of OR.



Applied
Physiology
Laboratory

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Development and Validation of the "Gorilla Run Test"

Lane C. Madison, Kylie J Brown, Nicholas B. Drake, Derek A. Crawford, PhD, and Michael J. Carper, PhD

Department of Health, Human Performance, and Recreation; College of Education; Pittsburgh State University



Background

Maximal oxygen consumption ($\text{VO}_{2\text{max}}$) testing is widely used in laboratories and requires expensive pieces of equipment. There are numerous prediction equations used to determine $\text{VO}_{2\text{max}}$, but none are based on the anaerobic treadmill test (AnTT).

Purpose

The purpose of this investigation was to develop and validate a regression models to predict maximal oxygen consumption ($\text{VO}_{2\text{max}}$) from AnTT time.

Methods

A total of 101 college-aged males and females (trained: 20.4 ± 1.6 years, 174.3 ± 8.4 cm, 71.4 ± 13.6 kg, 23.2 ± 3.0 BMI; untrained: 20.3 ± 1.9 years, 175.3 ± 11.2 cm, 78.3 ± 19.1 kg, 25.0 ± 3.8 BMI) participated in this investigation.

Subjects performed a $\text{VO}_{2\text{max}}$ treadmill (TM) test utilizing the Bruce protocol. A metabolic cart was used for collection of expired gases and determination of $\text{VO}_{2\text{max}}$.

48 hours later subjects performed an AnTT where the treadmill was set at a 20% grade and speed was determined based off their $\text{VO}_{2\text{max}}$ classification (males: 8mph trained, 7mph untrained; females: 7mph trained, 6mph untrained).

Time to exhaustion and $\text{VO}_{2\text{max}}$ were collected during this test. Reliability of $\text{VO}_{2\text{max}}$ estimates were compared to Bruce $\text{VO}_{2\text{max}}$ values using interclass correlation coefficients (ICC) while Bland-Altman (BA) plots were used to determine the agreement (presence of bias and number of values falling within ± 2 SD limits of agreement, LOA) between the two methods of $\text{VO}_{2\text{max}}$ determination.

Results

Separating trained ($n=43$) and untrained ($n=58$) subjects, significant correlations are present between $\text{VO}_{2\text{max}}$ and AnTT time (trained: $r=.622$, $p=.000$; untrained: $r=.541$, $p=.000$).

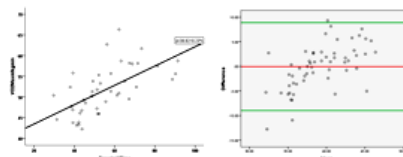


Figure 1. Linear regression scatterplot and Bland-Altman analysis for Untrained Subjects

Regression equations for both groups (trained: $y=38.82+0.23x$; untrained: $y=28.64+0.2x$) demonstrate moderate reliability for estimating individuals' $\text{VO}_{2\text{max}}$ based on AnTT time (See Table 2). BA plot analysis reveal no significant bias from the line of equality for either equation (trained: mean=.18, $p=.793$; untrained: mean=-.05, $p=.929$) and acceptable agreement between the two methods (95% of values within LOA).

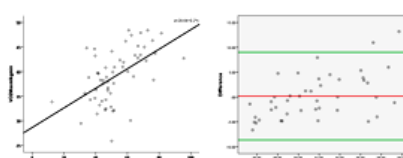


Figure 2. Linear regression scatterplot and Bland-Altman analysis for Trained Subjects

Results, cont'd

Table 1. $\text{VO}_{2\text{max}}$ Characteristics between Bruce and Anaerobic Treadmill Tests

	Trained Participants ($n=43$)		Untrained Participants ($n=58$)	
	Bruce Test	AnTT	Bruce Test	AnTT
$\text{VO}_{2\text{max}}$ (ml/kg/min)	51.6 ± 5.7	50.9 ± 10.0	39.1 ± 5.4	41.2 ± 10.2
RPE (bpm)	19.6 ± 1.0	19.8 ± 0.4	19.3 ± 1.0	19.9 ± 0.4
RER	1.5 ± 0.1	$1.4 \pm 0.2^*$	1.6 ± 0.4	$1.4 \pm 0.2^*$
Maximum Heart Rate (bpm)	192.4 ± 7.8	$173.5 \pm 10.7^*$	194.8 ± 9.6	$181.4 \pm 14.5^*$

*Values are shown as Mean \pm SD.

*Indicates significantly different from Bruce Test, $p < 0.05$.

Table 2. Intraclass Correlation Coefficients for Bruce vs Estimation

	Bruce Test	Estimation	ICC
Trained Participants ($n=43$)	51.6 ± 5.7	$51.5 \pm 3.5^*$.718
Untrained Participants ($n=58$)	39.1 ± 5.4	$39.2 \pm 2.9^*$.629

*Not significantly different from Bruce Test, $p > 0.05$.

Conclusion/Future Research

Based on these results, we have created reliable regression models to predict $\text{VO}_{2\text{max}}$ from AnTT times that are in agreement with direct assessment during the Bruce protocol. These models need to be tested using a unique sample to confirm this agreement and to identify standard error of the estimates in order to determine their validity for use in practice.

Acknowledgements

We would like to thank the undergraduate students of the Exercise Science program at Pittsburgh State University. Without their assistance this project would not be possible.



Follow Us on Instagram!

@pittstatehhpr



@pittstatehhpr : Did you know that our HHPR Department offers a minor and certificate in Dance? If you didn't know, now you do! This is our Dance Program Coordinator, Dr. Janice Jewett and she's holding an informational flyer that we are distributing to anyone/organization interested in getting information. If you would like a flyer let us know or tag someone you think might like information! #pittstatehhpr #dance #performingarts



HHPR Recreation Program Design and Leadership students carrying out a Fall Event with local 1st graders! They made fall wreaths, played pumpkin tic tac toe, pumpkin ring toss, pumpkin memory game, and pumpkin bowling! Lots of great conversations and smiles! #pittstatehhpr #recreation #activities #pumpkins #fall | photo credit: Janice Jewett



Happy Monday! HHPR Intro to PE class learning elementary games with Mrs. Pam Owings. #pittstatehhpr #physicaleducation #physicalactivity #activities | photo credit: Julia Spresser



Week four of Therapeutic Interventions for Older Adults class leading activities for residents! #pittstatehhpr #therapeuticrecreation #activeaging #recreation #activities | photo credit: Laura Covert



Dr. Kevin Cooper, Assistant Superintendent for the Webb City School District was a guest speaker for our HHPR Physical Education students. Great opportunity for our students to hear about the real world of teaching! #pittstatehhpr #physicaleducation #webbcity #teaching #guestspeaker | photo credit: Shelly Grimes



Dr. Jewett's Dance Appreciation Class in the 38th Annual Christmas Parade



Leading the class are two little reindeer, Dezmond and Hayden Burt, and their mother, Tami Burt, a HHPR Dance Instructor.



HHPR Students in the Pom Squad also danced in the Christmas Parade. Pictured left to right: Meagan Neigsch, Abby Welcher (Exercise Science), Isabelle Libel (HHPR Aquatics instructor), Idalis Bird (Exercise Science), and Maddy VanBeceleare.

Congratulations to our Graduates!

Exercise Science

Taylor Blackburn

Emilyn Dearman

Kel Ebert

Jesse Hart

Denise Klincik

Tyler McCurry

Ryan McNerlin

Brie Moore

Quinn Morris

Jordan Morton

Brooke Munsterman

Tyler Poole

Casey Powell

Allison Rons

Nicholas Tincher

Alexandria Van Becelaere



Recreation

Alexandria Andrews

Dakota Crumpacker

Zoe Eberle

Jacob Guiot

Kayla Light

Derek McKnight

Graduate Students

Jennifer Bean

Rayannon Bluemel

Kelli Boling

Derique Cary

Noelle Gambill

Devin Hance

Corie Hocker

Matthew Johnson

Reginald Langford JR

Natalie Magee

Lita McDaniel

Alexander Mese

Anthony Perry

Kevin Schadt

Trent Smith

Physical Education

Sindy Daniels

Clayton Hufford

Lawren McKinney

Tanner McNutt

Michael Sanders



Once A Gorilla, Always A Gorilla!

A special THANKS to those who gifted the HHPR Endowment

Bob Ahrens

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James and Marilyn Barrows

Ron and Susan Downing

Patrick and Stephanie Forbes

Stephen Foster

Mrs. Linda S. Garrison

Jack and Jean Gilmore

Scott and Beth Gorman

Michelle Grimes

Richard and Stephanie Grinage

Rob Hefley

Rick and Cheryle Moore

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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

Michelle Adams
Samantha Ray

Laura Cault

Susan Downing

John Oppeliger

Jelly Drum
Vi Dale

Bittan Thomas

Jan 23

SmahBart

Janice Jewett

Rob H

Katherine Pinto

Riley Aiken

Kaylah Cates

Kirsten Morris

Julia Gresser

M. Jeanne
Forman

Cole Shewmake

Chelsy Thompson

Rob H
MF



Frosty

