At Penn State, we have the opportunity to be a leader, to be the program that best prepares our students to living well in the world, to be the best in laying the foundation of healthy habits among our peer institutions. Let’s be...unique. Let’s be...visionary. Let’s truly affect people.

Why is Physical Activity a Crucial Component of General Education?

Physical Activity & the GHA

Evidence for Inclusion in General Education Reform

Department of Kinesiology
April 2014
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Executive Summary: Physical Activity & the GHA

It is currently more important than ever to expose all students to tenets of healthy living and to establish a physical activity and exercise program at the collegiate level. The CDC’s Task Force for Community Preventive Services has recognized that college-based physical and health education programs are effective for promoting and improving physical activity participation among young adults (Kahn et al., 2002). This is the last opportunity to make a lasting, large-scale impact on the many men and women who will enter the world where behavior change will become more difficult with age. As educators, we have the responsibility to fulfill our mission that states we are a university that improves the well being and health of individuals and communities through integrated programs of teaching, research, and service.

The GHA requirement, in particular its inclusion of physical activity, is a feature of our curriculum that should be celebrated by the university in support of our mission and in our efforts to consider the whole student in General Education Reform. Via the marriage of movement and theory in the GHA, we provide an intervention; in other areas in academia this may be called practiced-based learning, engagement, even laboratory experience, but the GHA’s “experiment” IS the human body, and our outcomes are measured in impact of such variables as fitness acquisition, behavior change, wellness, and disease risk modification.

As part of the GHA experience, the Kinesiology Physical Activity Program alone has tremendous impact across the university and at University Park annually serves over 8,000 undergraduates, produces approximately 13,000 student credit hours, and offers academic intervention-based courses that focus on fitness & wellness experiences that can be practiced across the lifespan. We have several established mechanisms of program assessment at UP yielding data such as:

- **Students’ perceptions of how physical activity and a healthy lifestyle relate** - Students rate “the value of the skills and knowledge learned in this course towards leading an active healthy lifestyle” as 6.5/7.0 and “the degree to which this course motivated you to continue an active healthy lifestyle” as 6.4/7.0.
- **Physical progress and health changes** – For example, students enrolled in a hybrid course (weekly lectures and practical learning) who completed both pre- and post-assessments of physical fitness showed positive results across ALL five components of health-related physical fitness.
- **Assessment of the state of the student body** - In a review of the exercise and medical histories of 2,286 students (mean age 20.6 years) passing through the Center for Fitness and Wellness prior to the start of their fitness-based GHA courses, we saw a disturbing picture where 50.3% of our students were considered sedentary, 35% of students were overweight or obese, and 58% were classified as being at moderate or high risk for the development of cardiovascular disease. Two sub-sets of student volunteers completed baseline cholesterol testing, and results showed 36% (n=160) and 34% (n=78) of students met criteria for abnormal cholesterol in the same age group.

*We at Penn State have an opportunity, and arguably a responsibility, to graduate and place healthy people into the workforce showing that we value physical activity and health when other institutions clearly do not.* This stance would set a precedent that our graduates are up to the physical rigors of work and day-to-day life without experiencing lost time due to absenteeism, lower on-the-job
productivity, and exorbitant medical care costs because of health conditions that are largely preventable. According to the CDC, over 60% of American adults do not participate in regular physical activity (CDC, 2010). It is conventional knowledge that physical activity and exercise can be used to manage life-style risk in aiding in the management of weight-control issues such as obesity and metabolic syndrome, improve insulin sensitivity (type-II diabetes), decrease hypertension, and reduce risk of cancer and cardiovascular disease. Why not put our students in the best position possible for success in the workforce and for life-long health and fitness?

Many connections have been made between the effects of physical activity and improved function. Explorations of the connections between exercise and the brain commonly show an improvement in thinking skills including ability to organize thoughts and decision-making (Ratey, 2008). Studies continue to support the notion that physical education and activity can boost students’ cognitive skills, contribute to overall health and wellbeing, and instill a life-long appreciation for physical activity. Creativity is bolstered during and following physical activity (Oppezzo, 2014). In college-aged students, we can affect behavior in a number ways by creating positive habits over the course of a semester. To drive such changes, all people need to work to achieve physical literacy, described as a disposition acquired by human individuals encompassing the motivation, confidence, physical competence, knowledge and understanding that establishes purposeful physical pursuits as an integral part of their lifestyle.

Through movement and theory, we connect with people. Penn State provides venues and laboratories (movement spaces) for creating physical change, but it is the GHA that provides education and an intervention to make change. Impact is felt well past graduation and well beyond the obvious physical changes. Physical activity integrates itself into the bodies and behaviors of our graduates and delivers far more than movement to their daily lives. We provide the tools for challenge and discovery, and students change, taking lifetime skills and habits with them.

“My way of life, philosophies, humbleness, selflessness, diet, exercise, motivation, inner confidence, soul and peacefulness have improved, and continue to improve now, since taking your class.”

~ A former KPAP student 6-months post-graduation
Physical Activity & the GHA

Introduction:

The university provides many classrooms and laboratories and on-line platforms for learning, but without the professors, researchers, instructors, and TAs, they are just spaces. The people who enter them are just patrons. It is with the addition of instruction, be it in the arts or humanities or in movement education or sciences, that those spaces come alive and the patrons become students. Physical activity is no different.

At a time when primary and secondary education is trimming funds from such areas as health and physical education, it becomes more important at the collegiate level to expose all students to tenets of healthy living and to establish a physical activity and exercise program. It is at the collegiate level where we have the final opportunity as educators to make a lasting, large-scale impact on the many men and women who will enter the world on their own where behavior change will become more difficult with age. The health of our children, teens and college-aged students is in even more jeopardy than in previous generations.

In this quest to reform General Education, are we being true to the mission of this great land-grant university?

The mission of this university is: “Penn State is a multicampus public research university that educates students from Pennsylvania, the nation and the world, and improves the well being and health of individuals and communities through integrated programs of teaching, research, and service. Our instructional mission includes undergraduate, graduate, professional, and continuing education offered through both resident instruction and online delivery. Our educational programs are enriched by the cutting edge knowledge, diversity, and creativity of our faculty, students, and staff. Our research, scholarship, and creative activity promote human and economic development, global understanding, and progress in professional practice through the expansion of knowledge and its applications in the natural and applied sciences, social sciences, arts, humanities, and the professions. As Pennsylvania’s land-grant university, we provide unparalleled access and public service to support the citizens of the Commonwealth. We engage in collaborative activities with industrial, educational, and agricultural partners here and abroad to generate, disseminate, integrate, and apply knowledge that is valuable to society.” At the very core of the mission of Penn State, is the importance of the well-being and health of individuals. The “public character” expansion discusses the importance of the “general welfare of the citizenry”.

At Penn State, we have the opportunity to be a leader, to be the program that best prepares our students to living well in the world, to be the best in laying the foundation of healthy habits among our peer institutions. Let’s be...unique. Let’s be...visionary. Let’s truly affect people.

Why is Physical Activity a Crucial Component of General Education?
“We are considering the whole person.”: Gen Ed Symposium, Oct 2013:

During the Q&A portion of the Gen Ed Symposium in Oct 2013, the Task Force stated that they were considering the “whole person” during the development of Gen Ed Reform. In this statement, it is impossible to ignore the physical body and its well-being.

We should be proud that we are among the few schools in the country to attend to the education of the whole person—particularly in an age of sedentary living, obesity, and rising health-care costs. Cutting physical activity is literally penny wise and pound foolish. Penn State is the people's school, and people in this day and age need to have the skills and attitudes to remain healthy and vigorous across the lifespan. And giving them only theory of health doesn’t help any more than a composition teacher expounding on the theory of paragraph formation without practicing writing skills or discussing only mathematical theory without applying theory to problem-solving. Our students need to practice writing, practice good health, and develop motor skills while at Penn State.

Application of Benchmarking in General Education Reform:

The General Education Task Force has chosen to apply benchmarking data inconsistently. Though the Core Council Report (March, 2011) specifically suggests that Penn State should distinguish itself “through its general education program as a first tier public university” and further that “Penn State’s undergraduate experience should distinguish it from other schools,” the application of benchmarking in creating uniformity with our Big Ten partners is most certainly not unique and distinguishing.

While other Big Ten institutions do not require students to take a General Health and Physical Activity requirement, we feel that this is not a benchmark that Penn State should aspire to emulate. As it is, Penn State in the ONLY Big Ten institution to have a requirement in health and human development which includes activity. Would this requirement not make us “unique” from our Big Ten peers? Shouldn’t Penn State strive to be the best in the Big 10? Wouldn’t developing a healthy, fit and physically educated student body be an important step in maintaining this status? This requirement with its inclusion of physical activity is a feature of our curriculum that should be celebrated by the university.

If you examine the 36 institutions who are ranked above Penn State in the US News and World Report ranking, nine (25%) of these institutions require physical activity and health for graduation in the form of such titles as physical education, health, wellness, and lifetime fitness. Institutions such as Massachusetts Institute of Technology, University of Virginia, University of North Carolina – Chapel Hill, Dartmouth College, and Georgia Institute of Technology are part of this premier list.

Only three credits of activity are potentially required at Penn State, which only equates to about 2% of total credits required to graduate. Over 2,500 years ago our founding philosophers were espousing that to be healthy one should be of BOTH sound mind and sound body. This implies a 50/50 emphasis, yet we are at 98/2 and looking to eliminate the last 2%.

We should aspire to be leaders in the field, to be different than conference institutions and to continue the long tradition of the GHA with the inclusion of both health AND physical activity for PSU students.
What Practice-Focused, Movement Courses Offer - A Clarification of the Programming:

There seems to be a misunderstanding about the GHA requirement and specifically what physical activity courses include. Because the effects of regular exercise on health, wellness and longevity are well documented, we do not need to justify doing physical activity. As part of the GHA, we provide an intervention; in other areas in academia this may be called practiced-based learning, engagement, even laboratory experience, but the GHA’s “experiment” is the human body and the impact our interventions have on the physical, emotional and psychological aspects of one’s body.

Kinesiology Physical Activity Program (KPAP) Overview:

One function of the Department of Kinesiology is to provide health science and physical activity courses for students who are completing their baccalaureate degree requirements. In accepting this role in the general education of students, the Department established the Kinesiology Physical Activity Program (KPAP) in 1999. The mission of KPAP is to teach both the immediate and lifelong benefits of regular physical activity is primary. Instruction differentiates KPAP from other programs such as intramurals, sports clubs or free play. KPAP seeks to develop an understanding of physical activity as an aspect of wellness, instill a positive attitude toward it, and contribute to an active lifestyle. In addition, the basic nature of KPAP is very conducive to fostering diversity and enhancing cultural understanding.

During an academic year the KPAP program offers approximately 300 sections of courses, employs between 30 – 35 instructors (holding advanced degrees and expertise in the field with very little turnover from year to year), serves over 8000 undergraduates, produces approximately 13,000 student credit hours and offers courses in both lifetime sports and fitness/wellness experiences.

Courses take on a variety of delivery modes that are practiced-focused and hybrid (both including academic material and learning objectives), with a few offerings that are solely classroom-based. Assessment is built into courses in several forms such as: objective testing of both theory and skills, journal writing, feedback on oral presentations or goal setting, outside research assignments, exercise and nutrition logs and diaries, bio-metric fitness assessments, and feedback on skilled performances. These varied types of assessment will allow for students to gain insight into how the activity plays out within themselves and in their lives with the goal that we are impacting students to adopt a long lasting affinity for physical activity during a critical window in their physical, emotional, and social development.

In addition to its normal complement of courses, KPAP has some unique course offerings that include either an interdisciplinary aspect or an embedded travel component. Examples of these programs would be our Wilderness Literature course which combines reading in wilderness literature, Introduction to Outdoor Pursuits and our Advanced Ballroom Dance Program in which KPAP students who have passed the Introductory Ballroom Dance class can travel and compete with other university students in Ballroom dance competitions. More recently, approximately 1000-1200 students per semester (from 28-40 sections of fitness-based courses) go through fitness assessments in our Center for Fitness and Wellness before and after their physical activity experience. An additional 175-210 students from a lecture-only course (Fitness for Life) do a one-time assessment each semester. Assessment results are incorporated into coursework.
The Impact of KPAP:

The Department of Kinesiology provides professionally supervised, long-term experiences for students. We hold students accountable to a full semester of consistent, safe and progressive exercise. Our classes are long enough to see measurable changes in fitness and produce life-long habits for exercise. As an example, many classes meet approximately 45 times per semester with better than 94% attendance.

Every time a person engages in organized goal-oriented physical movement they "learn" about their bodies and "develop" their "awareness" of the "mind", body and emotional "connection", as they "acquire" "new" "skills" and "problem solving abilities". Are these terms not associated with "academic"? As Plato said, "You can learn more about a person in an hour of play than in a year of conversation". A more recent quote on the relevance of physical education in academia is by Dr. George Sheehan, "The mind's first step to self-awareness must be through the body".

We feel the physical activity component of the GHA requirement is an essential part of the academic careers and lives of our students. Recall that the GHA is a Health & Physical Activity requirement which can be fulfilled in a variety of ways including lecture courses, hybrid courses which use traditional lecture and movement-based delivery, and integrated lecture and movement-based courses. In this document we emphasize the importance of the interventional option of the requirement provided through hybrid and integrated courses that use physical activity. Not only has the GHA requirement provided students with the opportunity to learn life-long health and physical fitness, it also has become a positive point in the lives of the students as noted in the May/June issue of the Penn Stater. We continue to have overwhelmingly positive comments from students regarding our classes. Some examples:

- "This course is very practical and encouraging to keep oneself healthy. I had a very positive experience."
- "It taught us things that we can take with us after the course is over."
- "It allowed me to get into a routine of physical activity."
- "The course was a good source of exercise and definitely made me feel better about myself."
- "I was really relaxed and I learned to control my stress."
- "I never knew what I could (or should) do. Thank you for helping me find out. I have already picked completing a 10K as my new goal/challenge."

People don't stop smoking because they have all the negative stats against smoking. They stop smoking because of some type of intervention. Classes that include a physical activity basis are that intervention when it comes to a healthy lifestyle and what should be a key university value.

Penn State Evidence of Value of Physical Activity and GHA:

Apart from scientific literature, SRC data recently collected from Penn Students during Summer 2013 supports some impact of Kinesiology courses on how physical activity is valued in the context of a healthy lifestyle, and whether participation in the courses helps to improve motivation to pursue a healthy active lifestyle. To begin to assess whether our KPAP courses begin to change students’
perceptions of how physical activity and a healthy lifestyle relate, we added two experimental questions to our SRTE’s during summer 2013:

- Data from approximately 400 students enrolled in 30 sections of classes (archery, golf, racquetball, tennis, fitness theory and practice, LEAP, jogging, strength training, Tai Chi, yoga, Exercise Stress Management, basketball, ultimate Frisbee) answered the following questions:
  - 1. “Rate the value of the skills and knowledge learned in this course towards leading an active healthy lifestyle.” \textbf{RESULT - mean 6.5/7.0}
  - 2. “Rate the degree to which this course motivated you to continue an active healthy lifestyle.” \textbf{RESULT - mean 6.4/7.0}

We continue to collect this data each semester.

The Health Risk of Our Student Body:

It is important to the livelihood of our PSU students that health and physical activity appear as areas of emphasis within Gen Ed reform. Our current students are insufficiently active to meet physical activity guidelines established by the Centers for Disease Control and Prevention and the American College of Sports Medicine.

In KPAP, we actively assess the physical progress and health of our students. In a review of the exercise and medical histories of 2286 students passing through the Center for Fitness and Wellness (Fall 2013 & Spring 2014) prior to the start of their fitness-based GHA courses, 50.3% of our students were considered sedentary, defined as not participating in 30 minutes of physical activity 3 days each week. A full 35% of these students were overweight or obese as defined by a body mass index (BMI) of 25.0-29.9 kg/m² and ≥ 30.0 kg/m², respectively. More disturbing, among this cohort with an average age of 20.6 years, 58% were classified as being at moderate or high risk for the development of cardiovascular disease according the American College of Sports Medicine criteria (Brinks, 2012). Yes, people can get fit on their own, but do they? \textit{Statistically, only 15\% of our adult population gets regular vigorous exercise.}

In initial cholesterol screening of two sub-sets of student volunteers, 36\% (n=160) and 34\% (n=78) of students met criteria for abnormal cholesterol (LDL ≥ 130 mg/dL and/or HDL < 40 mg/dL). It has been defined in the literature for decades that abnormal lipid profiles are related to increased risk of cardiovascular diseases; it has also been well documented that the effective ways to alter cholesterol level are through dietary change, cardiovascular exercise training, and medication (Mann et al., 2014). Among the most popular treatments, exercise has been shown to treat abnormal cholesterol at a level equal to or greater than the leading medication.

It is very concerning that such a large portion of college-aged students are at moderate to high risk for CVD, are considered overweight or obese, and have elevated cholesterol. Being physically active can affect ALL of these issues. Significant positive changes in body weight, lipid levels, blood pressure, body composition, and glucose levels have been observed in several populations when physical activity and exercise are used as interventions (Mathunjwa et al., 2013; Ziebarth et al, 2012).
Given the data from whom these statistics were drawn, meaning a population who is willing to actively participate and engage their bodies in physical activity and exercise, the student body at large may be even more at risk, in particular those who are not readily adopting movement as a key component to their overall health and well-being.

**A Sample of “Intervention”:**

A total of 177 students (124 males, 53 females) who were enrolled in KINES 061 (Fitness Theory & Practice) completed both the pre- and post-assessments in the CFW. Statistically significant positive results were observed across all five components of health-related physical fitness (HRPF):

<table>
<thead>
<tr>
<th>Test</th>
<th>Gender</th>
<th>Pre</th>
<th>Post</th>
<th>Significance</th>
<th>Component of HRPF</th>
</tr>
</thead>
<tbody>
<tr>
<td>VO2max</td>
<td>Male</td>
<td>37.5 ml/kg/min</td>
<td>40 ml/kg/min</td>
<td>P=0.006</td>
<td>Cardiorespiratory Fitness</td>
</tr>
<tr>
<td>Body fat %</td>
<td>Male</td>
<td>14.9</td>
<td>14.4</td>
<td>P&lt;0.001</td>
<td>Body Composition</td>
</tr>
<tr>
<td>Timed Push-ups</td>
<td>Male</td>
<td>35.5</td>
<td>39.7</td>
<td>P=0.03</td>
<td>Muscle Endurance</td>
</tr>
<tr>
<td>Dual hand grip</td>
<td>Male</td>
<td>69kg</td>
<td>78.2kg</td>
<td>P&lt;0.001</td>
<td>Muscle Strength</td>
</tr>
<tr>
<td>Dual hand grip</td>
<td>Female</td>
<td>42.2kg</td>
<td>49.0kg</td>
<td>P=0.001</td>
<td>Muscle Strength</td>
</tr>
<tr>
<td>Sit and Reach</td>
<td>Female</td>
<td>18.5 in</td>
<td>19.3 in</td>
<td>P=0.047</td>
<td>Flexibility</td>
</tr>
</tbody>
</table>

These results show that KINES 61 has the power to effect beneficial changes in the five components of health related physical fitness (cardiorespiratory fitness, body composition, muscle endurance, muscle strength, and flexibility). For all results except percent body fat a higher number represents enhanced fitness. No results were observed in any category that trended in the wrong direction. For example, females also showed improvements in cardiorespiratory fitness, but the result fell just short of statistical significance.

*The “Gen Ed Matters” site explicitly states the mission to be: “Our guiding principle in revising General Education is to enable students to acquire the skills, knowledge, and experiences for living and working in interconnected and globalized contexts, so they can contribute to making life better for others, themselves, and the larger world.”* We can address this in many ways, including through interventions in physical activity and health matters.

**The Obesity Epidemic:**

Rates of childhood obesity have quadrupled in adolescents in the past 30 years, with many of these students now entering college as obese young adults (Ogden et al., 2014). To further complicate this risk, obese youth are more likely to become obese adults with a greater risk of chronic health conditions such as heart disease, diabetes, stroke, several types of cancer, and mental health issues (Daniels et al. 2005; Freedman et al., 2007).

No matter the age group, overweight and obese individuals use more healthcare dollars compared with their normal weight counterparts, indicating this is an issue for university health services in addition to future employers, whether they provide health insurance or not. PSU just last summer took a stance or health care instituting biometric screening in an effort to understand the health of this community and
the impact that may have on our own health care costs. Considering the removal of the GHA, in particular courses in physical activity with embedded tools to create behavior change AND academic/education components, is unjustified and counter to the university’s recent actions with its own employees.

Students often struggle with the transition between structured physical activity and exercise settings found in high school programs to more lifestyle based physical activity and often lack skills and education to aid them in this transition (Sarling et al., 2007). Though we know, physical activity can help target the energy imbalance associated with obesity, it has been shown that physical activity participation declines with number of semesters in college (Small et al., 2013). *All physical activity based options in our current curriculum focus on lifetime sport and activity, so students can lay foundations and continue these habits through the lifespan, thus potentially affecting their risk for life-style related illness such as obesity, diabetes, cardiovascular disease, cancer, and stroke.*

Furthermore, the CDC’s Task Force for Community Preventive Services has recognized that college-based physical and health education programs are effective for promoting and improving physical activity participation among young adults (Kahn et al., 2002). The Exercise is Medicine™ and the Exercise is Medicine™ on Campus initiatives followed (see “The Exercise is Medicine™ initiative” section).

**The Exercise is Medicine™ Initiative:**

In November 2007, the American College of Sports Medicine (ACSM) AND the American Medical Association (AMA) jointly launched the global Exercise is Medicine™ (EiM) initiative; one goal was to improve the communication among healthcare providers including physicians talking to clients about physical activity (Berryman, 2010). It is estimated that behavioral causes currently account for 40% of all deaths in the United States, and obesity and physical inactivity combined, along with smoking, are the top causes of premature death (Schroeder, 2007). In recent years, several articles have shown the impact of physical activity in management and prevention of disease and that “physical activity, while not a drug, can behave like one” (Lee, 2007). It is conventional knowledge that physical activity and exercise can be used to manage life-style risk in aiding in the management of weight-control issues such as obesity and metabolic syndrome, improve insulin sensitivity (type-II diabetes), decrease hypertension, and reduce risk of cancer and cardiovascular disease.

Following the launch of EiM in 2007, the presidents of the co-sponsoring units said it best. ACSM president Robert Sallis, a California-based family physician, explained to reporters that “if we had a pill that conferred all the proven health benefits of exercise, physicians would widely prescribe it to their patients and our healthcare system would see to it that every patient had access to this wonder drug.” Similarly, the AMA president, the late Ronald Davis, asked his colleagues if they “learned that a single prescription could prevent and treat dozens of diseases, such as diabetes, hypertension, and obesity, would you prescribe it to your patients?” Also in attendance was the Acting Surgeon General, who warned that “the practice of engaging in regular physical activity is one which must be adopted broadly by individuals and families everywhere if we, as a nation, are to make truly sustained progress in health promotion” (Berryman, 2010).
The Exercise is Medicine™ movement has since grown world-wide, with leaders and educators across the globe uniting under one cause. As the global community continues to turn towards exercise as a major player in the future of healthcare, how can we as a University turn our backs on it? Exercise truly is medicine. Creating an active, educated culture for our students to take with them as they leave our halls may just be the greatest opportunity we have to truly “improve the well-being and health of individuals and communities.”

Physical Activity across the Lifespan and Our Healthcare: What Happens When We Send Students into the World?

Upon graduation, what happens when we send students into the world? Every unit in every corner of this university wants some information about this issue. One thing we know is that we are sending students into a world of changing health care. Penn State’s Highmark insurance initiatives presented to the faculty and staff include physical activity opportunities and the importance of taking care of oneself in order to lower insurance premiums. Why not give this same respect for the health of our students? Many organizations, including the Wall Street Journal, continuously rank Penn State as a top recruiter for potential employers. As such, we have an unprecedented opportunity to be a leader in graduating students who are not only in high demand academically, but who also have the life skills and tendencies necessary for becoming highly productive, healthy employees. While the rest of the nation continues to struggle with skyrocketing healthcare costs, let us at Penn State buck the trend, embrace the GHA, and leverage it to produce the most well educated, healthy, and in-demand candidates of any university.

Not unlike our own employer’s changes to health care, potential surcharges for poor health habits, and increased health care costs to the employee, students are entering a workforce with unknown healthcare coverage and charges. According to Bloomberg Business Week, 79% of large employers now have health assessments incorporated into their programs in hopes to encourage healthier habits and reduce overall health-care costs. We at Penn State have an opportunity, and arguably a responsibility, to place healthy people into the workforce showing that we value physical activity and health when other institutions clearly do not. This stance would set a precedent that our graduates are up to the physical rigors of work and day-to-day life without experiencing lost time due to absenteeism, lower on-the-job productivity, and exorbitant medical care costs because of health conditions that are largely preventable.

One of the dire issues facing our society today is the prevalence of preventable chronic diseases, many of which can be controlled, if not prevented entirely, with the proper lifestyle modifications (CDC, 2010). Alterations in lifestyle behaviors (i.e. physical activity, proper diet, and stress management) can have a significant impact on the rates of chronic diseases and thus lessen the economic toll they take. Perhaps the largest factor contributing to this trend is the increase in sedentary lifestyles and lack of daily physical activity. According to the CDC, over 60% of American adults do not participate in regular physical activity (CDC, 2010); this number is only slightly lower (50%) in our own student body.

In a study by Blair in 2009, the effect on mortality of six health factors (cardiorespiratory fitness, obesity, smoking, hypertension, hypercholesterolemia, diabetes) were compared and analyzed. Findings revealed that low cardiorespiratory fitness contributed to more deaths than obesity, diabetes, smoking,
cholesterol, and diabetes combined, and significantly more deaths than hypertension alone (Blair, 2009). This science provides proof that regular physical activity needs to become a key piece of America’s healthcare puzzle.

Through focusing on the health and wellbeing of our students, we provide key life skills to aid in their success beyond college in both the workplace and in daily life. Continuing to offer courses on a required basis ensures we reach the entire student body. The GHA requirement including a physical activity component is vital because it gives those who may not have participated in physical activity courses in the past a positive opportunity to learn lifelong health and physical activity.

Additionally, we are sending students into a world of misinformation that is readily available by those espousing personal philosophy or looking to make a quick buck. This has only become more prevalent with constantly expanding social media. Our challenge as exercise and health professionals is both educating students with proper information and tools as well as helping them to understand how to filter information that is potentially dangerous to them and others around them.

Retaining the GHA general education requirement will allow us to teach our student body the skills necessary to effectively incorporate exercise or physical activity into their busy lives, skills that will continue to bring rewards well after they have graduated. The impact of physical activity and adoption of a continuous exercise and fitness plan has impact throughout the lifespan from childhood through older adulthood, including the dwindling normal, healthy population and those with various disease states. Again, exercise is medicine; turning our backs on the GHA in the future is tantamount to turning our backs on our students’ health.

**The Impact of KPAP Classes on Other Aspects of Health and Wellbeing:**

**Considering Physical Literacy:**

**Physical literacy** is a fundamental and valuable human capability that can be described as a disposition acquired by human individuals encompassing the motivation, confidence, physical competence, knowledge and understanding that establishes purposeful physical pursuits as an integral part of their lifestyle.

Let’s consider the analogy between other "skill" areas like writing or composition and our physical activity domain. The important educational gain in English is to be able to write well. That is to actually do it skillfully. Wouldn’t it be odd if we told writing teachers that they are only allowed to present students with writing THEORY?

Likewise, we don’t want to settle for students knowing the THEORY of health or the THEORY of movement skill. We want them to be healthy and to move skillfully. We know that theory and practice are interrelated and embody this notion in our courses. We are not opposed to theory or in any other sense anti-intellectual, but we value what philosophers call procedural or how-to knowing—the kind of knowing habits that healthy people have, the kind of knowing skills that good movers have.
Physical Activity & Creativity:

Explorations of the connections between exercise and the brain commonly show an improvement in thinking skills including ability to organize thoughts and decision-making (Ratey, 2008). As recently as April 2014, a group of Stanford researchers released evidence of improvement in creativity when study participants completed creativity tasks either immediately following walking (inside or outside) or while completing comfortable-paced walking. In each case, participants produced significantly more and subjectively better ideas during or post-walking than in their pre-exercise testing period (Oppezzo, 2014).

Physical Activity & Behavior Change:

In particular in college-aged students, we can affect behavior change in a number of habits. Over the course of a semester, we have a brief time to instill behavior change. To impart a continual habit in physical activity or exercise, it typically takes up to 6 months (Dishman, 1994). The parameters of the university calendar are ideal to lay the foundations for change through interventions with physical activity.

Brief interventions using a positive goal image of fitness, and addressing a number of health habits have the potential to influence positive changes in multiple health behaviors of college students including the frequency of both moderate physical activity and exercise, consumption of foods containing healthy fats, the quantity and acqeuency of one’s sleep, frequency of riding with someone drinking alcohol, use of self-control behaviors to avoid or limit drug consumption, as well as indicators of health-related quality of life (Werch et al., 2007). Thus, there is the potential for a “carry over effect” such that a successful physical activity behavior intervention can be associated with other positive lifestyle behavior changes.

Given the poor health status of Americans today, the GHA requirement addresses issues that surround such matters as the high rates of obesity, inactivity, poor nutrition, tobacco use, and drinking and how to implement changes in habits as well as others.

Physical Activity & Cognitive Function:

Studies continue to support the notion that physical education and activity can “boost students’ cognitive skills, contribute to overall health and wellbeing, and instill a life-long appreciation for physical activity” (Lamiel, 2011). In addition in clinical studies, exercise has been shown to increase brain volume in areas implicated in executive processing, improves cognition in children with cerebral palsy and enhances phonemic skill in school children with reading difficulty (Ploughman, 2008). With the increasing numbers of students who present to us with existing health conditions, it is important to consider such special population outcomes.

In older adults, both multicomponent (prioritizing neuromuscular coordination, balance, agility and cognitive executive control) and progressive resistance training has been shown to promote functional mobility. These forms of training seemed to have the common outcome of counteracting age-related
decrements in cognitive executive functioning and performance on the selected functional mobility tasks. However, the paths leading to cognitive outcomes seemed to be different (Forte et al., 2013). Findings such as these may support rationale for exposure to a variety of training types.

Lack of Continuity between the University Strategic Plan and General Education Reform:

It is concerning that there is a lack of apparent communication between University Strategic Planning and General Education Reform. One of the pillars of the University Strategic Plan has been “Promoting our Health” throughout the planning process. As the strategic plan should guide the values and direction of the institution, it is disturbing that the reform of General Education is not moving in tandem. Is it possible that we end up with a university focused in one direction with a curriculum that does not promote the very values of the institution?

Clearly administration and curriculum should be separated, but the direction must be considered and should be working in congruence. As a university that is focused on assessment and evidence-based knowledge, there is much discrepancy here. (In reality, discussion of actual budgets and evidence of secured funding by the university throughout the Commonwealth should be demonstrated as well.)

Why PSU Strength & Fitness is Not a Substitute for Academic Instruction in Physical Activity & Health:

Though PSU provides fitness facilities, the mission of PSU Strength & Fitness is solely to provide space and opportunity for recreation at an affordable rate. PSU Strength & Fitness does not provide education, instruction, or foundations for behavior change in the patrons of the fitness centers or fitness classes, and there are no plans to do so at this time. In fact, this group specifically stays out of education. It is wonderful that the university provides space for activity, but we also must know how to use that space effectively. They provide our laboratories for creating physical change, but the GHA provides the intervention/education. We must also note that purchase of a fitness membership does not necessarily translate into use of that membership.

Patrons in the fitness facilities are not required to learn how to exercise properly, change their fitness plans to meet changing goals or health status or effects of aging, understand the mechanics of movements to create proper technique to avoid injury and improve results, understand the physiological changes occurring in the body through movement, etc.

We all know the potential quality, or lack-there-of, of information on the internet and in the media; in particular in fitness there are many poor pieces of information geared toward instant gratification that can cause injury, not create results in individuals, and that is unfounded. The educational and academic portion of physical activity courses address these issues and many more to promote safe, effective lifelong physical activity and exercise.

We also must consider that there is a disparity in the offerings of fitness facilities across all campuses in the PSU system. The fitness facilities vary in terms of offerings of fitness classes, facility size, and quality/age of equipment. Some facilities are newly renovated, yet others are in need of updates.
However, we must also consider that just building fitness centers in and of itself does not produce a fit population any more than making calculators creates mathematicians.

NOTE - the mission of PSU Strength & Fitness: "to provide the opportunity for students, faculty, and staff to attain any desired, personal fitness goals in safe, up to date, and well-maintained campus fitness centers. To the best of our ability we hire, train, and employ the most educated and capable staff to service fitness center patrons. We only purchase quality, state-of-the-art equipment and continually research new equipment that is introduced into the market. We seek to uphold the highest standards of safety and minimize equipment downtime each day. We endeavor to create an environment where every patron feels comfortable to train at an individual level and we have provided all the tools necessary for the best possible workout experience." This mission statement, respectfully, accomplishes that passive goal of creating spaces, and relying on an "if you build it, they will come" strategy. In contrast, our GHA courses provide a proactive opportunity such that there is active and purposeful student engagement, and students are given and practice skills useful for life. In effect, we "teach a man to fish".

**What do Penn State Students Think?**

A Statement by the Executive Officers of Kinesiology Club on Behalf of the Kinesiology Club’s 300 Members:

"Based on evidence from focus groups and club discussions, the multidisciplinary characteristic of the kinesiology major is one of the top reasons why students choose to attend Penn State. Having the opportunity to choose a Health and Physical Activity GHA course bridges the gap between theory learned in the classroom and practical examples of physical activity. This is especially important for students whose path leads to the allied health, fitness, and wellness career paths. For many of us, physical activity courses unearth the initial inspiration and love of health/fitness that sparked interest in pursuing a degree in kinesiology."

- 2013-2014 Kinesiology Club Officers
A Sampling of Notes from Students about How KPAP Classes and KPAP Instructors Impact Their Lives through Movement:

Included below are just a sampling of the hundreds of letters we receive as a group each semester. You will see samplings of the impact we have on student lives, and isn’t that the real goal we all have, to impact our student’s lives! We get to know the students, and they feel comfortable sharing their lives with us. We also receive many notes years later about the life-long impact we have had on them.

This is a very small sampling from a variety of courses and instructors over recent semesters.

From:  
Date: April 30, 2014 at 9:55:14 AM EDT  
To: ZACK PAPALJA <zv55003@psu.edu>  
Subject: Final Project

Hi Zack,

I just want to say thanks for an awesome course, I never used to like working out, but I actually look forward to our Mon / Wed / Fri workout sessions. So thanks again, I hope you have a nice summer! I’ll be recommending this class to all of my undergrad friends for sure!

From:  
Date: Fri, May 2, 2014 03:53 PM  
Subject: Penn State ANGEL: Thanks and Goodbye  
To:  

You received the following message in your Penn State ANGEL account. This mail message originated from KINES 077, Section 003: YOGA 1. If you wish to respond, please do so using the ANGEL mail utility.

From:  
Subject: Thanks and Goodbye  
To: BOCCUMINI, KRISTEN N

Hi, I meant to say all this to you in person but forgot with the excitement of class and then I didn't make it back in time before you left.

Anyway, I just wanted to say thanks for this semester. The forgiveness unit single handedly helped fix my relationship with my mom. We couldn't be closer now and I can definitely say I got exactly what I wanted out of this class. My whole view on life and myself has changed, and again I just wanted to thank you. I will make every effort to continue practicing yoga. You are a wonderful instructor and I wish you luck and health and happiness with your baby and motherhood and whatever else comes your way.

Namaste.

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From: 
Date: April 14, 2014 at 10:28:14 PM EDT
To: STACEY KRUPSKI <SAK155@psu.edu>
Subject: Re: Penn State ANGEL: FYI: Center for Counseling & Psychological Services (CAPS) on Campus information

Stacey,

I just wanted to send an email thanking you for today's lecture on CAPs, stress, and the not so nice side of what it can lead to. Depression is something that I have lived with on and off since I was in middle school and you are one of the first adults to acknowledge that anxiety, stress, and need to talk to a 3rd party is something that happens and that it's okay. This year in particular has been of both good and bad extremes, but one of my biggest goals is to be more open about it and talk to as many people about everything to show that it is okay.

The way you presented the information in class was amazing and incredibly professional, but more importantly approachable. I wish there were more people like you in a leadership role who show that it's not something to hide or be ashamed of.

That's why I felt it was so important (maybe a little corny) to send you an email. I appreciated everything you said because I feel like there's so many people I feel who see CAPs, or talking to someone, as a label or a stereotype that you belong in a looney bin which is completely outlandish!

P.S. - I have an appointment at home early Monday, April 21st, with my rheumatologist. I should be back in State College with time to come to class but I was worried about our presentations. Are they just on Monday? Thanks!

Best,
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From: 
Date: May 8, 2013 4:35:42 PM EDT
To: Jim Sullivan <jje31@mac.com>
Subject: Re: last Aikido assignment of semester

Sensei,

After roughly 6 months in constant retrospect I can't help but write a quick email to thank you sincerely for guiding my body, mind, and soul to an improved state. I do not practice Aikido anymore, but what I took from your class, be it introductory or not, was invaluable in more than just a physical skill set. My way of life, philosophies, humbleness, selflessness, cist, exercise, motivation, inner confidence, soul and peacefulness have improved, and continue to improve now, since taking your class. I exercise regularly now (something I did not enjoy doing before Aikido) and still repeat our typical warm up and stretch routines that you led in class (including Seiza!). I live in California now and occasionally other graduates/friends will ask what my favorite class was at Penn State. I no longer tell them "it's a toss up between fluid mechanics and intro to combustion" instead I tell them "Aikido".

Thanks for everything,
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College of Engineering | Engineering Science
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From: [REDACTED]  
To: "MICHELE DUFFEY" <mlp127@psu.edu>  
Sent: Thursday, April 26, 2012 4:41:47 AM  
Subject: Cleveland, Ohio

Professor Duffey,

This email is to follow up on our conversation earlier today about my moving to Cleveland, Ohio, for a consulting position that will have me traveling Monday through Thursday nearly every week once I begin work in October. The town with the apartments I would like to live in is Sagamore Hills, approximately 30 minutes south of Cleveland and 30 minutes east of the airport. Nearby is the Cuyahoga Valley National Park and one of the Metro Parks Bike and Hike Trails.

It has definitely been a pleasure having you as a professor this past semester and having your husband in the fall. I look forward to continuing on my own many of the workouts we did in class and to apply the various concepts we learned about during your topic talks. I am still amazed at the progress I have made since August (a 9:35 mile and a half time dropped to 8:13 and about 10 additional situps and 20 additional pushups in a minute), which is a testament to the both of you and how you operate the class. Thanks for helping me get back to being physically fit!

Best,
[REDACTED]

RECEIVED 3.5 YEARS AFTER GRADUATION:

From: [REDACTED]  
To: mlp127@psu.ecu  
Sent: Monday, January 7, 2013 12:22:20 PM  
Subject: Former Student - 2009

Michele,

I was a student in your 2009 physical conditioning class and wanted to write and say thank you for teaching such a wonderful course. I had never run longer than a mile or so when I started the class but by the end of the semester I was hooked. I started competing in 5k’s that summer and since then I’ve completed three marathons and a half Iron-man. I can’t imagine my life without endurance sports, and it wasn’t until recently, when a friend asked me how I got into running that I realized that it was the competitive camaraderie of your class that really cultivated my love of the sport. I wanted to write and express my appreciation of how well you introduced the class to running, and to how fun and challenging you made the sport. I hope all is well, and that you continue to inspire others to find their inner runner.

Sincerely,
[REDACTED] Class of 2009
Kinesiology 81, as well as our instructor Maureen Horan, has changed my life for the better. I originally signed up for the course because I needed a kinesiology credit to graduate. However, this has honestly been one of the best courses that I've taken at Penn State. I have learned so much about health and taking care of yourself and these are skills that I will utilize for the rest of my life.

This semester I accepted a full time position with AIG in New York City. The catch was, they wanted me to start working while I was in school. This was a huge adjustment and I wasn’t sure how I was going to manage doing school and essentially a full time job. Every week I looked forward to kinesiology 81 because it helped me to manage my stress and reminded me that even though life is crazy you still have to find time to take care of yourself.

The wellness programs offered through Penn State are key to the success of students. We have this constant focus on all things academic and sometimes, especially in college, we forget to take care of our bodies. Maureen taught us the importance of treating your body correctly and leading healthy lifestyles. I feel like my life has been changed for the better from this course and I will be forever thankful for how it helped me to get through this semester. The skills that I learned will be essential as I transition from college to the business world.

A HUGE thank you to Maureen for believing in all of her students and helping us to become the best that we can be.

BS, Labor and Employment Relations
REFERENCES:


