Kinesiology Regents Academic Advisory Committee
"The Value of an Exercise Science Graduate"
November, 2016

1. What is Exercise Science?

According to the Commission on Accreditation of allied Health Education Programs, Exercise Science encompasses a wide variety of disciplines including, but not limited to: Biomechanics, Sports Nutrition, Sport Psychology, Motor Control/Development, and Exercise Physiology[1]. The study of these disciplines is integrated into the academic preparation of Exercise Science professionals. Exercise Science professionals work in the health and fitness industry, and are skilled in evaluating health behaviors and risk factors, conducting fitness assessments, writing appropriate exercise prescriptions, and motivating individuals to modify negative health habits and maintain positive lifestyle behaviors for health promotion. They conduct these activities in university, corporate, commercial, performance or community settings where their clients participate in health promotion, sports performance and fitness-related activities.

As an integral part of the health and wellness team, Exercise Science professionals can work with Personal Fitness Trainers and Exercise Physiologists in a number of different settings, such as corporate, clinical, community, and commercial fitness and wellness centers. Exercise Science professionals work with the apparently healthy population and clients with controlled disease, leading and demonstrating these clients in safe and effective methods of exercise. The Exercise Science Professional can also assess risk factors and identify the health status of clients.

An Exercise Science program can be completed in a four year Bachelor's degree level program. Applicants should have a high school diploma or equivalent and meet the specific institutional entrance requirements. Exercise Science programs will include a comprehensive academic curriculum and at least one culminating internship experience.

2. How Does Undergraduate Training in Exercise Science Benefit Students?

The current Exercise Science curricula in the state of Georgia prepare students for many different occupations such an exercise physiologist/specialist, advanced personal trainer, strength and conditioning coach, pharmaceutical sales, medical equipment sales, public health educator, wellness coach and a host of related allied health related fields. It also serves as a strong foundation to enter graduate level training in exercise physiology, physical therapy, occupational therapy, chiropractic medicine, physician assistant, allopathic and osteopathic medicine[1].

Annual job demand for the above mentioned Exercise Science occupations are on the rise according to the U.S. Bureau of Labor Statistics (BLS), by 11% during the 2014- 2024 interval.

[1] Commission on Accreditation of allied Health Education Programs, Exercise Science. Accessed on October 31, 2016 http://www.coaes.org/

The average annual salary for fitness trainers and aerobics instructors is $47,010[2]. The median salary in Georgia for professionals with a Bachelor of Science in Exercise Science is $63,500[3]

The American Physical Therapy Association (APTA) lists Exercise Science as one of the most common undergraduate majors for those aspiring to apply to physical therapy school (Doctor of Physical Therapy)[4]. During 2014 to 2024, BLS predicts an increase of 34% in the offices of physical[5], and occupational therapies[6]. The median salary for occupational therapists is listed at $80,150[5] and for physical therapists is $84,020[4]. For chiropractors the median salary is listed at $64,440[7]. The demand in physician assistants increased over the last few years. According to USDL, by 2024, physician assistant occupation will see an increase in demand by 30%, when compared to the year 2014. The median salary is listed at $98,180[8].

With respect to Strength Training and Conditioning job forecast at national level are improving: In 2014, the National Collegiate Athletic Association (NCAA) passed a mandatory standard of certification for strength training and conditioning coaches[9]. The median salary for Strength Training and Conditioning coaches is $39,792[10].

Graduates of the Exercise Science programs have the opportunity to enter the academia or related research fields such as: exercise physiology, epidemiology, human performance, exercise

[2] U.S. Bureau of Labor Statistics. (2015). *Exercise Physiologists*. Retrieve from http://www.bls.gov/ooh/healthcare/exercise-physiologists.htm
[3] Payscale. (2016). *Exercise Science salary in Georgia*. Retrieved from http://www.payscale.com/research/US/Degree=Bachelor_of_Science_(BS_%2F_BSc),_Exercise_Science/Salary#by_State
[4] Doctor of Physical Therapy. (2016). Retrieved from www. apta.org
[5] U.S. Bureau of Labor Statistics. (2015). *Physical therapists*. Retrieve from http://www.bls.gov/ooh/healthcare/physical-therapists.htm
[6] U.S. Bureau of Labor Statistics. (2015). *Occupational therapists*. Retrieve http://www.bls.gov/ooh/healthcare/occupational-therapists.htm
[7] U.S. Bureau of Labor Statistics. (2015). *Chiropractors*. Retrieve http://www.bls.gov/ooh/healthcare/chiropractors.htm
[8] U.S. Bureau of Labor Statistics. (2015). *Physician assistants.* Retrieve http://www.bls.gov/ooh/healthcare/physician-assistants.htm
[9] National Strength & Conditioning Association. (2015). *Strength & Conditioning Coaches*. Retrieved from https://www.nsca.com/articles/ncaa-division-1-certification-standard-for-strength-and-conditioning-coaches/
[10] Payscale. (2016). *Strength and conditioning coaches salary*. Retrieved from http://www.payscale.com/research/US/Job=Strength_and_Conditioning_Coach/Salary

science or teach in professional schools (physical therapy, occupational therapy, chiropractor school). The median salary for a kinesiology professor is $60,220[11].

3. How do Exercise Science Graduates Benefit the State of Georgia?

Background

The Exercise is Medicine™ initiative is a joint collaboration between the American College of Sports Medicine (ACSM) and the American Medical Association (AMA). In short, the goal of this initiative is to encourage physicians and other healthcare providers to prescribe exercise during each patient visit as indicated[12]. The focus of the platform is to promote physical activity as a healthy behavior modification to improve the overall health of our nation[13]. The American Medical Association (AMA) recently classified obesity as a disease[14]. The deleterious impact of obesity and other comorbidities can be linked to a sedentary lifestyle and are often classified as hypokinetic diseases. In 2015, the obesity rate in Georgia ranked 19th in the country, 15th for diabetes mellitus, 15th for physical inactivity and 9th for hypertension[15]. Obesity is one of the largest contributors for preventable chronic diseases and increased healthcare costs in the nation with employers spending between $1,143 and $6,694 annually for an obese employee[16].

Healthcare

Physical inactivity or a sedentary lifestyle is a major epidemiological problem and is now considered to be the greatest health problem of the current century. Most clinicians are hesitant to incorporate or prescribe exercise into the plan of care for patients because they receive very little if any formal training in exercise physiology while in medical[13]. An integrative medical curriculum based on tenets of the Exercise is Medicine® global initiative has been proposed for medical schools and residency programs[17] to hopefully address this predicament. In this context, exercise

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[11] Salary Expert. (2016). *Kinesiology professor salary*. Retrieve from https://www.salaryexpert.com/salarysurveydata/state=georgia/job=kinesiology-professor/salary

[12] American College of Sports Medicine. (2016). Exercise is medicine. Retrieved from http://www.exerciseismedicine.org/

[13] Cardinal, B.J., Park, E. A., Moosong, K. & Cardinal, M.K. (2015). If exercise is medicine, where is exercise in medicine? Review of U.S. medical education curricula for physical activity-related content. *Journal of Physical Activity and Health,* 12, 1336-1343.

[14] American Medical Association. (2013). AMA adopts new policies on second day of voting at annual meeting. AMA News Room.

[15] Segal, L.M., Rayburn, A., and Martin, A. (2016). The state of obesity: better policies for a healthier America 2016. The State of Obesity: Obesity Policy Series, September Issue Report. Trust for America's Health. Robert Wood Johnson Foundation.

[16] Finkelstein, E. A., DiBonaventura, M. D., Burgess, S. M., & Hale, B. C. (2010). The costs of obesity in the workplace. *Journal of Occupational and Environmental Medicine*, 52, 971–976.

[17] Hill, L. L., Nichols, J., Wing, D., Waalen, J., & Friedman, E. (2015). Training on Exercise is Medicine within an integrative medicine curriculum. *American Journal of Preventive Medicine*, 49S278-S284.

or physical activity is now being heralded as the new vital sign in the clinical setting[18]. This new vital sign is imperative to instill in patients the positive correlation between exercise and positive health outcomes. Clinical algorithms exist for practitioners to effectively screen patients before they become physically active, which also includes the recommended exercise prescription for various conditions and morbidities.[19] Physicians, nurse practitioners and physician assistants should also refer to qualified and credentialed exercise professionals to provide a continuum of care for their patients[20]. Primary care providers often find it difficult to locate credentialed exercise professionals. This necessitates the need for more collaboration between the healthcare community and fitness experts[18]. After all, if a physician can refer a morbid obese patient to a bariatric surgeon, it is only logical that they should refer to an exercise professional as well[18]. Physical education, and ultimately exercise science, is the product of modern medicine in the early twentieth century[21]. There is compelling evidence that the medicinal benefits of exercise are once again coming to the scientific and medical forefront. In 2017, the National Institute of Health has committed an unprecedented $170, 000, 000 to fund a six-year comprehensive study to examine the biomedical impact of structured exercise on approximately 3,000 pediatric, adult and geriatric subjects[22]. The study will also incorporate animals as experimental and control subjects[19].

Business and Industry

The necessity of an undergraduate degree in Exercise Science is also pertinent to the non-clinical setting. Corporate fitness and wellness programs are projected to undergo significant financial growth based due to an increase in the domestic product over the next three years[23]. Based on healthcare reform changes, employers are paying more in healthcare premiums and corporate fitness programming is an avenue to reduce healthcare costs and insurance premiums[24]. There also seems to be a positive correlation between employee fitness programs and employee health[25]. Hospitals and healthcare networks, as corporate entities, are also rapidly expanding into the

[18] Sallis, R. E., Baggish, A. L., Franklin, B. A., & Whitehead, J. R. (2016). The call for a physical activity vital sign in clinical practice. *American Journal of Medicine*, 129(9), 903-905.
[19] Wasfy, M. M., & Baggish, A. L. (2016). Exercise Dose in Clinical Practice. *Circulation*, 133(23), 2297-2313.
[20] Sallis, R. (2011). Developing healthcare systems to support exercise: exercise as the fifth vital sign. *British Journal of Sports Medicine,* 45(6), 473-474
[21] Verville, R. E., Ditunno, J. F., Tuakli-Wosornu, Y. A., & Sandel, M. E. (2015). Physical education, exercise, fitness and sports: Early PM&R leaders build a strong foundation. PM&R, 7(9), 905-912.
[22] Oaklander, M. (2016, September 12). The new science of exercise. Time Magazine.
[23] Halvorson, R. (2015). Corporate fitness and wellness to experience growth. *IDEA Fitness Journal*, 12(4), 11.
[24] Archer, S. (2011). How to become a corporate fitness professional. IDEA Health & Fitness Association.
[25] Karanja, D. (2015). Employer sponsored fitness programs in the workplace improve employee health. *Journal of Nutrition Education & Behavior*, 47(4), S27.

medical fitness market as a means to increase branding, increase market share revenue and decrease health care spending[26]. The number of medical fitness centers nationwide has increased by sixty-two % over the last decade[23]. For instance, a recent article in the Atlanta Journal Constitution highlighted five hospitals in metro Atlanta that have fitness centers managed by highly credentialed exercise professionals who also work for the University system of Georgia as adjunct professors[27]. The aforementioned trend necessitates that health and fitness facilities employ exercise professionals with a college degree in exercise science, or a related area, and are certificated by a respected professional organization. A baccalaureate degree in exercise science and a certification by the National Strength and Conditioning Association or the American College of Sports Medicine serve as a strong predictor of the exercise physiologist's knowledge and competency[28].

Higher Education

According to the Commission on Accreditation of Allied Health Education Programs[29], students matriculating from exercise science programs become credentialed health and wellness professionals often employed by hospitals, corporations, private industry or become entrepreneurs in the fitness industry. Therefore, they become a valuable resource to help curtail the epidemic of diseases and disabilities associated with a sedentary lifestyle within Georgia. It is only prudent that Exercise Science curricula, within the University System of Georgia, focus on evidence based standards and guidelines established by the American College of Sports Medicine[30] as recommended by the Committee on the Accreditation for the Exercise Sciences in collaboration with the Committee on Accreditation of Allied Health Education Programs[31]. Exercise Science, as a profession, must adopt a standardized curriculum for university programs, recognize an organization that is an advocate for the profession and endorse a national certification examination as a capstone credential for the exercise professional[28].

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[26] Sloane, T. (2015). Hospitals muscle up on 'MEDICAL FITNESS'. H&HN: *Hospitals & Health Networks*, 89(2), 30-34

[27] Caldwell, M. (2016, September 14). Workout, take health-related classes and more at these 5 hospital fitness centers in metro Atlanta. Atlanta Journal Constitution.

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Conclusion

Exercise professionals, with specialized credentialing, provide a cost effective resource for hospitals, physician offices and specialty clinics particularly in a managed care environment[32]. The role of the exercise physiologist encompasses primary, secondary and tertiary interventions in the realm of rehabilitation, community health, wellness coaching and corporate health and wellness programming for essentially all chronic diseases[29]. Students matriculating from exercise science programs are poised to meet the growing demands of the healthcare, corporate academic and private sector within the state of Georgia. The Exercise Science undergraduate degree has a broad application for the future graduate.

[32] Franklin, B., Fern, A., Fowler, A., Spring, T., & Dejong, A. (2009). Exercise physiologist's role in clinical practice. *British Journal of Sports Medicine*, 43(2), 93-98.