SAMPLE 1

Faculty Development Plan

Assistant Professor
College of Life Sciences
Department of Exercise Sciences
Timeframe: 2023-2026

CONTENTS:

PERSONAL STATEMENT

I am a faculty member in the college of Life Sciences, department of Exercise Sciences. I joined BYU in January of 2023 following more than four years as a Postdoctoral Fellow at the University of Minnesota. This document articulates my faculty development plan for 2023-2026 and outlines goals I plan to achieve as I prepare for Continuing Faculty Status.

I am honored to be a faculty member at BYU, and I promise to strive to create an environment that fosters academic excellence, spiritual growth, and service to others. Most importantly, and in line with the University's mission to educate the whole person, my aim is to create meaningful opportunities for our students through engaged learning, scholarship, and service. I believe this faculty plan outlines a path that will benefit me as I strive to strengthen myself, my students, the Exercise Sciences department, and the University as a whole.

SELF-ASSESSMENT

I have had the privilege of participating in a series of professional development situations that have provided me with valuable insights into both my strengths and areas for improvement. Reflecting on my journey thus far, I recognize that many of my strengths have been cultivated through collaborative experiences with exceptional scientists, educators, and colleagues, as well as through the support of my family and friends. While I am also aware of several areas where I have room for growth, I am confident that BYU's nurturing environment will aid me in refining these aspects throughout my career. In the sections that follow, I will highlight my recognized strengths and pinpoint specific areas for growth that I am dedicated to addressing within the next three years.

TEACHING

Strengths

- I strive to use simple and clear communication to teach complex principles and to set appropriate expectations.
- I establish a discussion-based classroom that encourages a high level of student engagement.
- I build an environment where students can feel comfortable to ask questions and seek guidance for continued success.
- I use analogies and real-life examples to make the material meaningful.

Areas of Growth

- I would like to work on improving my teaching strategies so that I can foster greater participation and accommodate a variety of learning abilities.
- I would like to feel more confident in the application of the course material that I am teaching so that I can better answer in class questions and have more command of the material.
- I would like to feel more confident about implementing gospel topics in class.

SCHOLARSHIP

Strengths

- I have a clear research plan for the next three years, evaluating potential therapies for treating traumatic muscle injuries.
- I have a wide range of skills that can be applied to answering relevant questions in the field of skeletal muscle conditions, such as aging, injury, disuse, and disease.
- I have an excellent support group of colleagues and potential collaborators throughout various disciplines on and off campus.

Areas of Growth

- I would like to increase my success rate with securing funding.
- At times I struggle to manage my time effectively between scholarship and teaching commitments and would like to improve this area of my work.

- I would like to build connections within the clinical community regarding skeletal muscle health.

CITIZENSHIP

Strengths

- I am motivated to work with students outside of the classroom.
- I am an active and engaged member of the department community.
- I am passionate about programs that support my field of research and build my community.

Areas of Growth

- I would like to find more ways to connect individually with members of my department.
- I would like to find ways to engage at the college and university level.
- I would like to become move involved with professionally focused organizations including the American College of Sports Medicine (ACSM), the American Physiological Society (APS), and the American Society of Transplantation and Cellular Therapy (ASTCT).

TEACHING PLAN

As an instructor at BYU, my primary goal is to create a transformative learning experience that integrates secular and spiritual elements that foster a passion for seeking truth, building knowledge, and developing critical thinking skills that extend beyond the classroom. My teaching approach will focus on four core strengths: clear communication, student involvement, meaningful assessments, and an accessible and inviting environment. I firmly believe that these elements are essential in empowering students to become active participants in their own education and preparing them for success in their personal and professional pursuits.

While I recognize that my strengths have provided some teaching success, I also recognize that I have certain areas that require attention and development. Specifically, I would like to broaden my teaching strategies to improve learning and participation, gain greater command of the course material (application in real-life settings), and have increased confidence to insert gospel topics into my teaching.

To achieve this, I have started talking with my colleagues to identify effective teaching strategies and I have attended several lectures to observe first-hand how various teaching strategies are applied in their classrooms (e.g., group discussion, case studies, and informal writing activities). One particular area I would like to focus on is integrating technology resources as a tool for teaching and to seek regular feedback from students. Additionally, I can gain insight by attending workshops and teaching related events. For example, I recently participated in the University workshop titled “Effective Teaching Principles Through a Gospel Lens”. These experiences have helped me build my course outline with clear learning objectives for my upcoming teaching assignment this fall.

While I feel confident in my capacity to teach my assigned classes, I am committed to further mastering the subject matter, especially its application in real world settings. I will strive to understand the theoretical foundations and connect them with real-life scenarios, creating a dynamic learning experience that equips students with the skills and insights necessary for success beyond the classroom. As an example of how I have approached my teaching assignment for the upcoming year (ExSc 385 - “Personal Training Strategies”), I recently shadowed personal trainers working with individual clients and small groups to gain insight on the overall process of being a fitness professional and to see how the principles I will be teaching in the classroom are applied to the workspace. I believe that bridging theory and application are valuable tools to share with students and that continuous improvement of my material will be central to achieving this goal.

Lastly, I value the opportunity to freely discuss gospel topics at a religious institution like BYU. However, my recent experience at the University of Minnesota has made me somewhat hesitant to openly discuss faith and religion. I recognize that this hesitancy is temporary and a natural response to different academic settings. To address this, I will aim to strike a balance in my approach, ensuring that discussions about gospel topics feel authentic. I will create an inclusive space where students feel comfortable engaging in meaningful conversations without feeling coerced or uncomfortable. By being mindful of my audience and using thoughtful discernment, I will foster an environment that respects and embraces the spiritual dimension that BYU offers. My aim is to create an inviting atmosphere that supports students in their exploration of spiritual topics as they embark on their journey of personal growth and understanding of the gospel of Jesus Christ.

Short-Term Teaching Goals (2023-2024)

- Introduce active writing activities into my classroom discussions.
- Develop a new course: EXSC 485 “Exercise and Wellness Certification Preparation”.
- Visit the Center for Teaching and Learning to discuss teaching strategies, review course objectives, and seek guidance to interpret student ratings.
- Hire a Teaching Assistant for EXSC 385.
- Share a spiritual thought each week related to the discussion topic.

Long-Term Teaching Goals (2024-2026)

- Introduce a new teaching strategy each year with a specific focus on integrating technology (e.g., group projects, practical assignments, etc.).
- Meet with the Center for Teaching and Learning each semester to go over my teaching evaluations and receive guidance and insight for upcoming courses.
- Complete the Personal Training Certifications for ACSM and NSCA.
- Improve student ratings each semester (above department average).
- Connect with local fitness professionals for guest lectures and job placement.
- Attend a teaching workshop/seminar each semester.
- Make it a priority to learn students names.
- Find more intentional, effective, and natural ways of integrating gospel principles into classroom teaching.

SCHOLARSHIP PLAN

I am equipped with a strong research foundation supported by three pillars of strength: a comprehensive research plan, a diverse set of skills, and an invaluable support group that fosters guidance and collaboration. With this solid framework in place, I am enthusiastic about making significant contributions to my field as a young and motivated scientist. My research interests revolve around skeletal muscle aging, injury, disuse, and disease, with a specific focus on traumatic muscle (VML) injuries. These injuries occur when a substantial portion of muscle tissue is bluntly removed, resulting in long-term functional loss and excessive scaring. My approach involves exploring regeneration, rejuvenation, and rehabilitation strategies that restore form and function to the affected tissue. I am deeply passionate about using both established and innovative approaches to make my discoveries. I leverage my technical expertise, which range from survival surgery and cell culture experiments to my knowledge of physiology and cellular biology to tackle complex questions about skeletal muscle health. Perhaps most important is the unwavering support and guidance from mentors, colleagues, and collaborators at BYU and other esteemed institutions that enrich my scholarly pursuits. While these strengths undoubtedly form the bedrock of my scholarship, I remain keenly aware of areas with potential for growth, in particular, I would like to enhance my funding success, improve time management to optimize productivity, and establish clinical connections to apply my research findings in real-world settings. By prioritizing these areas of growth, I am confident that I will establish a firm foundation for building a successful scholarship program that adds value to the department and contributes significantly to the field.

Firstly, I recognize the vital role of publishing and funding for driving impactful research and fostering innovation. Therefore, I am committed to publishing in high quality journals, improving my grant-writing skills, and expanding my network of funding opportunities. I was involved in a

significant amount of scholarship during my postdoctoral fellowship at the University of Minnesota and I am working with former colleagues to see that work through to publication. A portion of that work will also serve as preliminary data for grant proposals. I am taking a proactive approach to address funding by collaborating with researchers from the Virginia Commonwealth University and the VA, while also exploring potential collaborations with faculty members in Exercise Sciences and other departments here at BYU. Furthermore, I plan to seek the guidance of BYU's grant proposal team to explore diverse funding sources, both within the institution, such as the Interdisciplinary Research Origination Awards, and through external organizations like the Department of Defense. To that end, I recently attended seminars on funding opportunities through the National Institutes of Health and National Science Foundation, specifically targeting undergraduate-focused institutions (R15) and new faculty development (BRC-BIO) awards, which I will explore as potential funding sources moving forward. Overall, I am determined to enhance my ability to secure the necessary resources to advance my research and contribute meaningfully to my field.

Secondly, I acknowledge the critical role of effective time management in optimizing my scholarly productivity. To achieve this, I will strategically recruit students to serve as teaching and research assistants, delegating tasks while focusing on more significant responsibilities. I currently have four students assisting me in scholarship, which significantly enhances my ability to manage time efficiently. Additionally, I will implement a structured schedule, dedicating my time in the mornings to teaching and my afternoons to scholarship activities, enabling focused and uninterrupted work in each aspect. By embracing these time management strategies, I am confident that I will make more efficient use of my time and achieve greater success in both teaching and research.

Lastly, I am committed to expanding the impact of my research through a more translational approach, bridging the gap between animal research outcomes and human patients. To achieve this, I am eager to build clinical connections with healthcare professionals and institutions. I have initiated talks with the nursing department, which has been helpful in connecting me with potential clinicians that specialize in traumatic injuries. I aim to strengthen these connections further and explore opportunities with military facilities to engage individuals who have experienced traumatic muscle injuries. By establishing such clinical connections, I believe I can accelerate the development of successful solutions that directly impact human health.

Overall, I am dedicated to enhancing my scholarship by fortifying my research foundation and addressing areas of improvement. My comprehensive research plan, diverse skill set, and invaluable support group serve as the backbone of my academic interests. By increasing funding success, implementing effective time management strategies, and building clinical connections, I am confident that I will forge a meaningful and impactful path for the department and field.

Short-Term Scholarship Goals (2023-2024)

- Assist in moving work forward that was completed at the University of Minnesota, by contributing to writing and figure creation.
    - Myogenesis in gene edited chimeric pigs.
    - Herceptin treatment following VML injury to improve innervation.
    - Modified RNA delivery of Mycn for treatment of myocardial infarction.
    - Direct cellular reprogramming of MEFs to ETV2 expressing endothelial cells.
- Publish article on “Adaptations to the extracellular matrix using percussive massage”.
- Write for 2 hours each week on volumetric muscle loss injuries as part of a collaborative review paper concerning the pathophysiology of skeletal muscle injuries.

- Organize my time into dedicated teaching (mornings) and research (afternoons) blocks.
- Train students to complete flow cytometry protocols that contribute to collaborative projects within the department.
- Collect pilot data for year 2 grant proposal.
- Complete micro-CT scanner training and IACUC approval.
- Submit IACUC protocols (Rat breeding/Human umbilical cord transplants).
- Begin VML animal studies during Fall 2023 semester.

Long-Term Scholarship Goals (2024-2026)

- Publish a minimum of 2 manuscripts each year. Including one as first or senior author.
    - Juvenile vs adult skeletal muscle transplants following volumetric muscle loss injuries.
    - Human umbilical cord derived stem cells as a treatment for volumetric muscle loss injuries.
- Submit an external grant proposal during my second year, targeting undergraduate-focused or new faculty awards (R15, BRC-BIO or DOD).
- Build a collaboration to develop a protocol to induce heat therapy in rats.
- Attend and present research at 1-2 muscle related conferences each year.
- Explore collaborations with Jayson Gifford (cell culture), Rob Hyldahl (stem cell therapies), and Pam Van Ry (scaffold and Galectin-1 therapies)
- Pass 3-year review.

CITIZENSHIP PLAN

I am deeply aware of the significance of active citizenship within the academic community and beyond. To be a good academic citizen means actively engaging in activities that contribute to the betterment of the academic environment, while also supporting colleagues, students, and the broader community. My commitment to citizenship in academia centers around two primary goals: fostering a collaborative and supportive academic community and engaging in public scholarship and community outreach.

I want to foster a collaborative and supportive academic community and I am dedicated to actively participating in departmental meetings, seminars, and conferences, where I can contribute and offer support to colleagues. I want to build meaningful connections with other faculty at BYU that will utilize our unique skills and knowledge. For instance, I believe that an aspect of biomechanics in my research model could add significant value, and I am eager to seek guidance and expertise from faculty members in that area. In turn, my own set of skills could complement their work, creating a mutually beneficial partnership. Furthermore, I recently attended lunch with other faculty members on campus that are interested in skeletal muscle research. This interaction led us to initiate a skeletal muscle research group that will meet regularly, providing a platform for brainstorming ideas and seeking guidance and feedback for research projects. This endeavor has the potential to foster innovative and successful research collaborations within the muscle community on campus.

Engaging in public scholarship and community outreach is equally essential in academic citizenship. To fulfill this goal, I am committed to actively communicating my research findings to the broader public through high quality science articles, public lectures, and social media. By making academic knowledge accessible and relevant to the public, I hope to contribute to

informed decision-making and the betterment of our society. I also want to be involved in organizations (e.g., American Physiology Society and The American Society of Transplantation and Cellular Therapy) that have a positive interest in promoting health and advancing medicine. Furthermore, to extend my impact beyond the academic realm, I recently joined the community youth sports program, "The Strong Youth Project," as a local expert in exercise physiology and strength and conditioning. Through this involvement, I hope to share evidence-based, scientific approaches on resistance training and overall fitness principles with young athletes, parents, and coaches, with the hope that it enhances their athletic experience. This type of community engagement is instrumental in creating a positive impact on the local community and possibly beyond.

In summary, my commitment to academic citizenship lies in fostering a collaborative and supportive academic community and actively engaging in public scholarship and community outreach. Through active participation and meaningful contributions, I strive to make a positive impact on academia and my community.

Short-Term Citizenship Goals (2023-2024)

- Attend all department and college meetings.
- Invite a colleague to lunch each month.
- Attend and present to the skeletal muscle group on campus.
- Attend Southwest ACSM and the Integrative Physiological Society conferences.

Long-Term Citizenship Goals (2024-2026)

- Be actively involved in the “Strong Youth Project”.
- Serve as a committee member to graduate students.
- Serve as a journal and grant reviewer.
- Continue to meet regularly with faculty members.

MENTORING PLAN

I understand the importance of meaningful mentoring in shaping academic, spiritual, and personal development of our students. Guiding and supporting students on their educational journey is a privilege and responsibility I wholeheartedly embrace. While I believe mentoring is interwoven within the broader teaching, scholarship, and citizenship plans described above, I consider it a major focus and thus, have included a dedicated mentoring plan. This commitment to undergraduate and graduate student mentoring revolves around three pivotal goals centered on nurturing holistic growth by creating a culture of support, promoting personal well-being, and encouraging academic success.

My approach to mentoring in scholarship is anchored in one-on-one interactions, allowing me to understand and appreciate each student's individual talents, goals, and challenges. I currently have 4 undergraduate students within my lab. I encourage them to meet with me regularly—weekly if possible—to discuss ongoing projects. We also discuss professional goals and ways that we can work together to increase the chance of success. My plan is to continue recruiting undergraduate and graduate students into the lab, with the aim to help each individual student realize personal and professional goals. I believe it is my responsibility to equip students with tools, resources, and experiences that will help them be successful in their professional endeavors. In terms of mentored teaching, I want student to feel comfortable in approaching me for guidance or help, and I plan to keep an open-door policy where students can seek additional

assistance. I will also actively encourage students to explore opportunities beyond the classroom, like internships, research experiences, or community events, which offer hands-on learning that complements their formal education.

Ultimately, my aspiration is to establish a culture of mentorship and support among BYU students. I intend to do this by exemplifying positive values, showing unwavering respect for all individuals, promoting diversity, inclusivity, and a sense of belonging, and collectively celebrating achievements. Through these efforts, I hope to contribute to the holistic growth and development of BYU students, fostering a nurturing environment that empowers them to thrive academically, spiritually, and personally. Indeed, promoting personal growth and well-being will be a core focus of my approach, and I endeavor to be a source of emotional support and motivation. I am committed to actively listening to students, addressing their concerns, and offering empathy and understanding. By aiding students through academic, scholarly, or personal challenges, I aim to cultivate resilience. Considering past experiences, I will also actively advocate for a balanced work-life approach, underscoring the significance of self-care, familial relationships, and personal development alongside academic pursuits.

Short-Term Mentoring Goals (2023-2024)

- Train 3-4 research assistants (preferable juniors or younger) to perform laboratory tasks, including: animal care and husbandry, tissue harvest and processing, immunohistochemistry and microscopy, cell isolation and culture, flow-cytometry, gait analysis, aseptic surgery procedures, and in-vivo muscle function testing.
- Accept at least one graduate student for fall of 2024.
- Work with students to submit CURA applications.

Long-Term Mentoring Goals (2024-2026)

- Hold weekly lab meetings to discuss ongoing projects and review literature (journal club).
- Meet with research and teaching assistance individually on a weekly basis to discuss goals, address concerns, and if applicable, write grants, manuscripts, and abstracts.
- Take at least one student with me to a conference each year to present research.
- Work with students to submit a CURA application each year.

RESOURCE NEEDS

Access to high quality resources is undeniably crucial to the advancement of my teaching and scholarship. Within this context, I am fortunate to have access to a valuable vivarium staff and an array of essential equipment. The collaboration with the vivarium staff not only provides indispensable animal care expertise but also fosters a productive research environment that is constantly available to help me succeed. Additionally, the diverse equipment at my disposal empowers me to conduct intricate experiments and analyses, thus significantly contributing to the depth and breadth of my research endeavors.

The incorporation of a gait analysis system into my research pursuits holds the potential to advance the understanding of the pathophysiology related to traumatic injuries. This system's capabilities to collect and analyze data in real time would allow for a comprehensive understanding of biomechanical alterations post-injury, consequently informing the development of more effective treatment strategies. This technology aligns seamlessly with the nature of my research, enhancing the precision and applicability of my findings.

In tandem with my research, access to resistance training equipment could significantly enhances my practical teaching experience within the classroom setting. It would offer a unique opportunity for students to engage in hands-on learning, translating theoretical concepts into tangible experiences. This integration not only fosters a dynamic learning environment but also equips students with practical skills that are directly applicable to real-world scenarios and the potential to complete the certifications of interest, thereby augmenting their overall academic and professional growth.

In summary, I have access to incredible resources that will help me accomplish my teaching and scholarship goals. However, I am suggesting several resources that could provide additional value to my endeavor's.

- Gait analysis system for data collection and functional assessment of muscle. Ideal for grant proposal pilot data. *(I am currently seeking competitive price quotes and will likely use my capital equipment start-up funds to make this purchase).*
- Classroom equipment (blood pressure cuffs, body composition equipment, adjustable dumb-bells, kettlebells, TRX bands, medicine balls).

Jake Sorensen

PhD, CSCS
Course Development Project
Department of Exercise Sciences
EXSC 385: Personal Training Strategies

Course Purpose: To equip aspiring fitness professionals with the scientific knowledge, practical skills, and ethical principles necessary to excel in promoting health, wellness, and physical fitness within diverse populations.

Learning Objectives: By the end of the course, students will be able to:

1. Understand fundamental principles of exercise physiology and how to apply them to exercise.
2. Apply the principles of program design to create safe and effective training programs for individuals of varying fitness levels and goals.
3. Conduct reliable and valid fitness assessments that determine baseline fitness levels, help set smart fitness goals, and track progress.
4. Demonstrate effective coaching techniques and communication skills to facilitate motivation and adherence to exercise programs.
5. Understand and apply appropriate techniques for strength training, cardiovascular training, flexibility training, and other modalities commonly used in personal training.
6. Develop strategies for working with special populations, including individuals with chronic conditions, injuries, or unique needs.
7. Demonstrate ethical and professional conduct in the field of personal training.

Culminating Assessment: Design a Comprehensive Fitness Program for a Real Client

Students often share experiences where friends and family come to them for exercise advice, but they are often unsure how to proceed. This assessment addresses this issue directly by encouraging students to apply the principles discussed during class to a real-life scenario outside of the classroom. This is a skill they can use throughout their lives to benefit themselves and others whether or not they chose to be a fitness coach for their professional career. The assessment requirements are outlined below.

1. Minimum of 6 pages and Maximum of 10 pages.
2. Include a title and your name.
3. Address the following: the use of pictures, tables, and charts that help explain your ideas are highly encouraged.
   Client Selection & Assessment: Select a specific client for whom you will design a comprehensive fitness program. This client should represent a real individual with specific fitness goals, needs, and limitations. Conduct a thorough assessment of the client's current fitness level, goals, limitations, and any other relevant factors. Use appropriate assessment techniques to gather necessary information about the client's health history, physical capabilities, and lifestyle.
   Program Design, Duration, & Implementation: Develop a comprehensive fitness program tailored specifically to the client's needs, goals, and limitations. The program should include components such as aerobic (cardiovascular) exercise, resistance training, speed training, flexibility training, and any other relevant modalities based on the client's goals and preferences. Specify the duration of the fitness program. It could be a specific number of weeks or months, depending on the client's goals and circumstances. Describe how the fitness program will be implemented, including training frequency, duration of sessions, and any specific instructions or guidelines for the client to follow. Consider factors such as warm-up and cool-down routines, rest days, and modifications for individual exercises if necessary.
   Exercise Selection, Technique, & Progression: Choose appropriate exercises for each component of the fitness program, considering the client's goals, fitness level, and limitations. Ensure proper exercise technique and form. Develop a progression plan to gradually increase intensity, duration, or difficulty over time.

Justification: Provide a well-reasoned and evidence-based justification for the exercise selection, program design, and progression within the fitness program. Explain how the program addresses the client's goals, needs, and limitations. Support your choices with relevant principles of exercise science.

Presentation and Format: Present your final project in a well-organized manner. Use a clear and concise writing style. Include appropriate headings, subheadings, and visuals (e.g., charts, tables) to enhance clarity and understanding. Use proper citations for any sources or references used in your project.

4. References: Include a list of at least five peer reviewed scientific articles or sources that you consulted during the project.
5. Use proper citation formatting (e.g., APA, MLA) for both in-text citations and the reference list.
6. Submit to Learning Suite as a ".doc or .docx" file (this is required)

Assessments for Measuring Student Progress

Practical Lab Assignments: Each Friday, beginning in week 4, students will work in small groups to complete an experiential learning opportunity. Students will be tasked with applying theoretical principles discussed in the classroom, (e.g. fitness assessments, program design, exercise technique, etc.) and from the textbook, to a real-life situation. The practical labs are designed to mimic the responsibilities of a personal trainer when working with a client by enhancing understanding of physiology, developing hands on skills, foster critical thinking, and promoting professionalism. An example would be performing an initial health and fitness screen that requires them to measure levels of fitness using specific, evidence-based techniques.

Exams: The class will be broken down into three units:

- The Science of Personal Training
- Health Screens, Fitness Assessments, and Functional Movement Patterns
- Exercise Technique and Program Design

Student progress will be evaluated using an exam at the end of each unit. The exams will consist of multiple choice (25 questions worth 2 points each; 50%) and free response (5 questions worth 10 points each; 50%) questions.

Learning Activities

Groups: At the beginning of the semester, students will form into small groups of 3-4 people. Group members are tasked with an initial group assignment to build relationships that make it easy interact in class discussions and for work together throughout the semester on practical lab assignments.

Group Assignment: Group members are asked to meet-up in person or via Zoom for an out of class activity of their choice that allows them to talk and get to know one another. The activity should last for at least one hour. Activities can include eating, attending an event, playing games, going on a hike, etc. I strongly discourage costly activities. To receive points for the assignment, students are asked to submit a group picture and a short statement outlining what activity they participated in and something they learned or enjoyed during their activity. The purpose of the assignment is to get to know the members of the group as they will be working with them throughout the semester.

Class Participation: To begin each class period, students are tasked with explaining key theoretical concepts or demonstrating functional movement patterns, exercise techniques, or fitness assessment skills learned in the textbook or from previous class discussion. I often present these principles in the form of case study scenarios or reflective writing assignments. I believe that this approach helps the students apply concepts to real world problems or circumstances that they have experienced outside of the classroom. It also helps facilitate group discussion and address and questions that students may have.

Class Demonstrations: Many of the learning outcomes of this course are connected to physical skills, such as being able to measure blood pressure or demonstrate a proper exercise technique.

Thus, the use of class demonstrations helps facilitate the learning process and typically helps the students engage in classroom discussion, ask questions, and provides opportunities for feedback.

EXSC 385: Course Outline

Unit I: Introduction

Lecture 1: Course Introduction; Hierarchy of Personal Trainer Certification Options (NCCA accredited)
Lecture 2: Form Groups/The Business of Being a Fitness Professional **(Appendix)**

Unit II: The Science of Exercise

Lecture 3: Structure and Function of the Nervous System **(Chapter 1)**
Lecture 4: Structure and Function of the Muscular and Skeletal Systems **(Chapter 1)**
Lecture 5: Structure and Function of the Cardiovascular System **(Chapter 2)**
Lecture 6: Bioenergetics: Anaerobic **(Chapter 3)**
Lecture 7: Bioenergetics: Aerobic **(Chapter 3)**
Lecture 8: Biomechanics **(Chapter 4)**

Unit III: Intake Evaluation

Lecture 9: Exercise Psychology **(Chapter 8)**
Lecture 10: Client Consultation and Health Appraisal **(Chapter 9)**
Lab 1: Client Consultation
Lecture 11: Pre-participation screen **(Chapter 10)**
Lecture 12: Functional Movement Screen
Lab 2: Pre-participation Health Screen
Lecture 13: Fitness Evaluation Protocols and Norms **(Chapter 11)**
Lecture 14: Nutrition **(Chapter 7)**
Lab 3: Dietary Assessment
Lecture 15: Warm-up **(Chapter 12)**
Lecture 16: Flexibility and Body Weight Exercises **(Chapter 12)**
Lab 4: Warm-up

Unit IV: Movement Patterns/Exercise Technique/Program Design

Lecture 17: Movement Patterns (Push/Pull/Squat/Hinge/Loaded Carry/Core)
Lecture 18: Resistance Training Technique **(Chapter 13)**
Lab 5: Movement Patterns
Lecture 19: Adaptations to Resistance Training **(Chapter 5)**
Lecture 20: Resistance Training Program Design **(Chapter 15)**
Lab 6: Resistance Training Program Design
Lecture 21: Muscle Actions
Lecture 22: Adaptations to Cardiovascular Training **(Chapter 6)**
Lecture 23: Cardiovascular Exercise Technique and Program Design **(Chapter 16)**
Lab 7: Cardiovascular Program Design
Lecture 24: Plyometric & Speed Training Technique **(Chapter 17)**
Lecture 25: Plyometric & Speed Training Program Design **(Chapter 17)**
Lab 8: Plyometrics & Speed Program Design

Unit V: Working with Special Populations and other Responsibilities

Lecture 26: Preadolescent, Older, or Pregnant/Nutrition/Disease **(Chapters 18)**
Lecture 27: Disease & Injury **(Chapters 19, 20, & 21)**
Lab 9: Special Populations
Lecture 28: Facility and Equipment Layout and Maintenance **(Chapter 24)**
Lecture 29: Rest & Recovery
Lab 10: Facility Layout
Lecture 30: Guest Lecture

Course Development Grant Proposal
Exercise Sciences
Course: EXSC 385 Personal Training Strategies

Personal Training Strategies is a dynamic and hands-on course dedicated to empowering future health professionals with the knowledge and practical skills needed to excel in the fitness industry. With a focus on evidence-based practices and real-world applications, my class is designed to provide students with a comprehensive understanding of applied exercise physiology, development of fitness assessments skills, and to advance knowledge of exercise program design for a diverse population of clients. To enhance the learning experience and facilitate active student engagement, I am seeking support for basic resistance training supplies, such as adjustable dumbbells and a set of suspension training bands. These resources will not only enable me to conduct informative lectures and interactive demonstrations but also facilitate practical lab assignments and small group training sessions.

Access to adjustable dumbbells and resistance training bands offers the class several benefits. First, these tools will be used for in-class demonstrations, where students can observe proper form, technique, and execution of various exercises targeting a wide variety of muscle groups. Second, these exercise tools can be use for practical lab assignments, where students will gain hands on experience applying their knowledge to the design and implementation of personalized training programs for both hypothetical or real-life clients, where they must consider personalized factors such as goals, fitness levels, and equipment availability. Indeed, functional training workshops focused on exercises using suspension trainer bands and adjustable dumbbells can improve students' understanding of functional movement patterns and enhance their ability to design functional fitness programs.

In conclusion, the integration of these fitness tools into my personal training strategies course offers a complete approach to enhancing student learning outcomes. By incorporating hands-on demonstrations, the ability to perform fitness assessments, the development of practical skills and critical thinking, and a deeper understanding of exercise principles. This comprehensive approach helps prepare students for success in the health and wellness industry and also instills in them a lifelong commitment to evidence-based practice and continuous learning.

Goals for my second time teaching EXSC 385

EXSC 385 is a course that I was asked to develop from the ground up. While I believe the maiden voyage, which I taught in the fall of 2023, was successful and accomplished the course purpose, there is certainly room for improvement. I believe I can address some of these limitations by following the goals that I have listed below:

1. **Spend less time on quantity of content and more time with quality of content.**
   Based on feedback from student ratings, several comments were given about the pace at which I would present information. The comments suggest that I was at times too focused on content, and that I would rush through material that required further discussion.
   To address this, I plan to minimize or eliminate unnecessary information by limiting my presentations to roughly 15-20 slides per class (previously 20-30). This will allow me to focus class time explaining the content that really matters. In addition to minimizing slides, I plan to use more demonstrations, case studies, and class discussion to facilitate learning of the more difficult concepts.

2. **Improve the instructions for practical labs.**
   Based on experience and discussion with several students, there were times when the instructions for practical labs were unclear.
   To address this, I have asked for student feedback on how instructions could be improved, and I have made appropriate corrections.

3. **Incorporate gospel discussion naturally into the classroom.**
   I noticed my student ratings for spiritually strengthening were below the department average. I believe part of this limitation is partially based on goal number 2, trying to get through content. I also believe that time at my previous University has given me some hesitancy to speak freely about religious topics.

   I am addressing this by sharing at least 1 spiritual thought per week and striving to be spontaneous with sharing personal experiences and gospel messages with the class as I feel inspired.

Scholarly Development Project – Final Report

Over the past year, I have made excellent strides in advancing my scholarship endeavors, particularly in the realm of understanding and treating skeletal muscle conditions, with a primary focus on volumetric muscle loss (VML) injuries. VML injuries occur when a significant portion of skeletal muscle is abruptly removed due to various factors such as military combat, motor vehicle accidents, industrial mishaps, or even invasive surgeries. Despite skeletal muscle's inherent healing capacity, the natural processes guiding successful recovery often fail following VML injuries, leading to long-term loss of muscle function and, in severe cases, delayed amputation.

My interest in VML injuries stemmed from my tenure as a postdoctoral fellow at the University of Minnesota, where I spent the previous five years immersed in VML research. Equipped with the knowledge and skills gained during my tenure, I am committed to advancing research in this area and have several projects that are currently underway or in the development stage. My overarching research goals revolve around unraveling the pathology of VML injuries and pioneering novel treatments to enhance functional and regenerative outcomes for affected individuals.

In pursuit of these goals, I have achieved significant milestones over the past year that highlight my productivity and commitment to scholarly excellence. Notable accomplishments include co-authoring two peer-reviewed publications, obtaining approval from the Institutional Animal Care and Use Committee to commence my research endeavors, and securing an internal grant, the Bobbitt Award, through the College of Life Sciences, which provides essential funding support for my scholarly pursuits.

To enhance scholarly productivity, I have implemented various strategies, including a time management approach that is centered on dedicating my afternoon hours to improve my scholarship through writing papers and proposals, reading relevant literature, or working in the lab to collect data.

I have also built valuable collaborations with faculty of similar interest that focus on skeletal muscle and physiology. As part of this endeavor, I have played a major role in organizing a skeletal muscle research group on campus. We meet once each month to share data from ongoing research and to seek feedback for interesting and early-stage research proposals. As a result of this interdisciplinary collaboration group, I am involved in several research projects that bring new ideas and help build new research skills. These strategies have not only propelled my research forward but have also become integral components of my regular work habits, ensuring sustained momentum and efficacy in scholarly endeavors.

Lastly, a key aspect of my scholarship progress has been the inclusion of undergraduate students. I currently have six students contributing to the success of our research, with one

confirmed and a second possible graduate student planning to join my lab this fall. The contribution of students to my scholarship has elevated my opportunities for success.

In conclusion, my research journey over the past year reflects a steadfast commitment to advancing knowledge and addressing critical challenges in skeletal muscle health. Through strategic planning, collaborative engagement, and my enthusiastic dedication, I am poised to continue making impactful contributions to the field, ultimately improving outcomes for individuals affected by VML injuries and related conditions.

Citizenship Project – Final Report

I am engaged in two collaborative activities with fellow faculty members from my department. The first joint endeavor is aimed at exploring innovative approaches to address traumatic musculoskeletal injuries by combining my respective expertise in skeletal muscle injuries with that of my colleague, who is an expert in collecting and isolating stem cells from human tissue. My second collaborative project is a combination of my teaching direction, which is focused on helping students design appropriate exercise programs for a diverse population of individuals, with a community centered approach to educate coaches and parents on safe and effective ways for youth to engage in physical activity.

My scholarship project will yield valuable translational insights that move science from bench to bedside. Leveraging our complementary skill sets and research methodologies, we are developing a research proposal that is focused on the use of human umbilical cord stem cells as a potential treatment for traumatic injuries, which will be rigorously tested in an animal model to assess safety and efficacy. O ur c ollaboration utilizes o ur c ollective knowledge and skills to bridge the gap between basic science and clinical application, ultimately advancing the field of regenerative medicine.

Though it is early, our collaborative efforts have been promising. We have successfully drafted a research proposal outlining our experimental design, methodologies, and anticipated outcomes. Protocols have been submitted to respective committees and we are currently awaiting approval. From this collaborative experience, I have gleaned valuable lessons that will inform future collaborations. Specifically, the value of effective communication and proactive problem-solving, which have been key for helping us overcome early challenges to maximize our impact.

My second activity leverages my knowledge and real-world experience as a strength and conditioning coach. The project is named “The Strong Youth Project”, which is a collaborative initiative uniting scholars, coaches, and parents. Our collective mission is to educate and empower young individuals to lead healthy, active lifestyles through a holistic approach that integrates scholarly research, coaching expertise, and parental guidance.

My professional background as a strength and conditioning coach combined with my academic expertise as an exercise physiologist makes me a valuable contributor to the committee. Through collaborative discussions and decision-making processes, we have developed initiatives aimed at promoting physical activity and fostering positive attitudes towards health and fitness among youth. The experience thus far has been characterized by meaningful engagement and collaboration with fellow faculty and students. Future expansion will allow me to work closely with coaches and parents to share insights for designing age-appropriate exercises for youth that promote health and prevent injury.

Through my involvement in the Strong Youth Project, I have gained a deeper appreciation for the importance of collaboration and community engagement. Moving forward, I am committed to leveraging my role as a member of The Strong Youth Project to further advance the mission of the project and make a positive impact on the lives of young individuals in our community.

In conclusion, my citizenship activities exemplify collaborative efforts to address complex research questions and promote healthy lifestyles among youth. By working together with fellow scholars, coaches, and parents, we are fostering a culture of health and wellness in our community, empowering the next generation to lead active, fulfilling lives.