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**Developing an Adaptive Rock Climbing Curriculum for SUNY Cortland Outdoor
Pursuits**

Developed by:

Rebekah Mills

A Master's Project

Submitted in Partial Fulfillment of the Requirements for the Master of Science in
Recreation

Department of Recreation, Parks and Leisure Studies

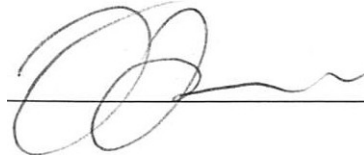
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State University of New York College at Cortland

May 2021

SUNY Cortland Outdoor Pursuits opened in August of 2015 with the completion of the newly constructed Student Life Center. Outdoor Pursuits is a smaller department within the Recreational Sports Department. Outdoor Pursuits offers rock climbing services at its facility located in the Student Life Center. Currently, Outdoor Pursuits offers Bouldering and Top Roping services only when the Student Life Center is open, these hours are typically 3-10 pm. Monday-Friday and Saturday-Sunday 2-8 pm. These services are only provided to eligible SUNY Cortland faculty, staff, students, alumni, and other affiliated members. As the facility has grown in popularity during its operation, it has become apparent that there is a need for expanded programming. The need for additional programming is highlighted by the current lack of services for individuals with functional differences. To create a program that caters to the needs of individuals with functional differences, SUNY Cortland Outdoor pursuits would need to establish an adaptive climbing program. This adaptive program plan, in turn, required the development and administration of a needs assessment interview.

The needs assessment provided the committee with valuable information needed for creating a program plan that adapted and enhanced the current mission, vision, values, and goals of SUNY Cortland Outdoor Pursuits and specifically the climbing wall. Based on the needs assessment interview results, a program plan has been created specific to Outdoor Pursuits and allows for a blueprint staff manual and training guide that SUNY Cortland Outdoor Pursuits can refer to in the future, should they choose to expand their programming to individuals with functional differences.

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My family, I find it exceedingly difficult to find words that are adequate enough to address and thank you all for your undying love and support throughout my journey. Thank you all for teaching me to be the person that I am, and for always pushing me to overcome, adapt and be determined to complete and crush any obstacle that is in my way. Y'all are the best, thank you from the bottom of my heart and I absolutely love you all.

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CHAPTER ONE

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

It has been identified that the SUNY Cortland Outdoor Pursuits rock climbing wall does not offer adaptive climbing services; either during normal building hours or in a clinic/after-hours setting. Yet, SUNY Cortland has a reputation for being an ADA compliant campus with ADA compliant facilities. If SUNY Cortland prides itself on its inclusivity, then Outdoor Pursuits should have the ability to employ adaptive rock climbing services and methodology. Individuals who wish to use the rock climbing wall, but are unable to, may be experiencing constraints on their participation; such as, a lack of services being offered, or a lack of staff knowledge and training on employing safe and appropriate methods. Moreover, there are also social concerns involved in the lack of

services offered. Individuals may feel as though they are being discriminated against, that they are unwanted participants, or that they do not belong. To mitigate these issues and reduce the likelihood of legal concerns, it is of the utmost importance to address any accessibility issues and concerns and find a solution.

Developing a solution for the unresolved issues around access could be achieved by creating a training schedule and a resource guide that provides an overview of the systems or methods that can be put into place during regular hours without requiring extra costs or staffing.

Research has shown that recreation and leisure have positive effects on overall mental and physical health (Coleman & Iso-Ahola, 1993). Accordingly, it is of the utmost importance to provide recreation services to individuals involved in and affiliated with SUNY Cortland. Research suggests the need for increased availability of adaptive recreation programming that meets the needs of diverse ability levels as such programs remain an under explored area of recreation service provision (Dykens, 2012).

One agency working to increase access is Paradox Sports. Paradox Sports is an agency run out of Eldorado Springs, Colorado and founded by rock climbers Malcom Daly and Timmy O'Neill. This agency has been in operation since 2007, and their mission is to provide services to individuals of all ability levels and training to climbing facilities. According to Paradox Sports, there are six facilities in New York State that have been trained to operate and facilitate an adaptive climbing program. Central Rock Gym located in Rochester, Cornell University and SUNY Cortland are the only three facilities located outside of the New York City and Long Island area. Although SUNY Cortland was trained to offer these services in 2015, adaptive climbing services have not

been offered on a regular basis since, if at all. Further, the individuals who were trained by Paradox Sports when the Student Life Center opened in 2015, are no longer affiliated with the SUNY Cortland Outdoor Pursuits program. Thus, there are no longer any individuals who have been trained to provide these services.

Beyond basic climbing knowledge, staff must also be educated on equipment and program implementation, as well as cultural awareness and sensitivity (Leyser & Kirk, 2004). Staff should always be well trained and capable of providing services, especially adaptive climbing services. Proper training and staffing are important when offering high-risk activities such as rock climbing, but also when offering services to individuals with different ability levels to ensure that goals are being met and the participants are perceiving benefits from the activity. It is also important that staff are culturally sensitive to ensure that when speaking to participants and their families that the staff is bridging the gap between cultures and showing respect for differing values or beliefs. If staff are not cognizant of the participants wants/goals or their needs, then participants will likely not get the most benefits from the programming because they will not perceive their experiences as beneficial or worthwhile. Awareness of individuals and their needs is of the utmost importance when providing services to ensure that each individual is using the appropriate equipment that aligns with their physical abilities and goals for rock climbing. Thus, if staff are not educated and confident in building and utilizing adaptive methods or equipment, then participants will experience further barriers to participation. The facilitation of an adaptive climbing program should focus on improving communication, socialization, and the health and well-being of the participants (McAvoy, Smith, & Rynders, 2006).

Through its focus on communication, socialization, and well-being it becomes clear that adaptive programming is important for more than just providing services. Adaptive programming is also important for creating a community of individuals who have similar lived experience, as it may be more challenging for these individuals to relate to their family or age-matched peers on life experiences, daily challenges, or other challenges relating to their ability level. Therefore, according to Paradox Sports (2015), creating this environment is an important means of providing access to inclusive recreation programming, which can have additional health and wellness benefits such as allowing individuals to defy standard conventions, to give them opportunities for increased physical activity, to gain friends and a social community, to allow for personal growth, gain compassion, gain dignity, find a greater sense of self and even irreverence. By eliminating or reducing the number of barriers for participation these individuals will, as research suggests, be more likely to participate in programming which can holistically improve multiple aspects of their life.

While inclusive campus-recreation programs can offer a range of benefits for participants they are often programs that are over-looked, under-staffed, or do not exist at all (Leyser & Kirk, 2004). Unfortunately, SUNY Cortland's lack of an adaptive climbing program adds to this larger social problem. As a provider of campus-recreation programming, it is important for SUNY Cortland to offer adaptive programming and ensure adequate staffing to allow for participation. Indeed, participation in adaptive programming has been shown to have a range of benefits for individuals who participate in inclusive and adaptive outdoor and experiential education programs, such as those run by Wilderness Inquiry and Outward Bound, including physiological development, skills

retention, self-confidence, socialization, and tolerance for others (McAvoy, Smith, & Rynders, 2000). The development of these skills is important as individuals may not have other opportunities to do so in their daily lives. Outdoor programming is a vital part of any campus-recreation program; however, the developers must also be committed to the inclusion of all students regardless of physical ability. Although this programming is not required, it is a basic human right to allow all individuals regardless of skill or ability level participation in programming. Ergo, if such programs are offered then they must be open to all.

Lastly, research suggests that at the completion of recreation or leisure activities, participants had gained a sense of accomplishment, due to having learned skills and/or partaking in an activity that the individual thought they could not complete or achieve (McAvoy, Smith, & Rynders, 2000). By creating goals, and allowing programming focused on each individual, the participants will be more likely to perceive greater benefits. Through creating a more inviting community and allowing for freedom of participation in activities, individuals will have the ability to learn, adapt, and create goals for themselves. This will allow for self-growth and reflection and will greatly increase health and well-being of participants and the campus-community overall.

In summation, the SUNY Cortland Outdoor Pursuits program could benefit from the implementation of a training guide and resource guide to better serve individuals in the campus community. According to the research, the provision of effective adaptive programming is not only an obligation of campus recreation programs but also important to individuals who need such services to enjoy a full and active leisure lifestyle. To this end, a needs assessment would be helpful in determining the strengths and weaknesses of

the SUNY Cortland Outdoor Pursuits program as part of a larger process to create a resource guide and training manual.

Statement of the Problem

The purpose of this project is to create a training guide and adaptive rock climbing curriculum for SUNY Cortland's Outdoor Pursuits program. This curriculum should be used in conjunction with the Paradox Sports Handbook (2015) and Paradox Sports Adaptive Climbing Manual (received by SUNY Cortland Outdoor Pursuits in 2015). Currently at SUNY Cortland, there are no adaptive or inclusive programs being run out of Outdoor Pursuits specifically related to rock climbing. The lack of adaptive or inclusive programming is a barrier to participation for individuals on the SUNY Cortland campus and the wider Cortland community.

Project Purpose and Objectives

The proposed training guide and curriculum would include all objectives and methods that can be employed at SUNY Cortland by the staff within an adapted climbing program. Moreover, the proposed materials will include all relevant adaptive climbing

systems, as well as, required staff for safe operation. Further, the program would include training on equipment selection to address the needs of a range of participant types.

Facility Objectives:

Objective One: Complete a program needs assessment regarding adaptive programming

Objective two: Create a training manual that provides information on adaptive climbing systems and techniques.

Objective Three: Create a training program that trains staff on the techniques shown in the manual as well as cultural humility as it relates to adaptive sports

Objective Four: Develop a standardized assessment to ensure Facility staff are able to operate adaptive rock climbing systems safely and appropriately

Objective Five: Establish an ongoing training schedule for all Outdoor Pursuits (OP) staff to ensure an ongoing ability to offer adaptive programming.

Delimitations

The project targeted a specific population within the SUNY Cortland campus community. This targeted population includes all faculty/staff, students and alumni or others affiliated with one of the previously mentioned groups. The project focuses on the

creation of an adaptive rock climbing training guide and curriculum, including post course assessment and training cycle, for use at the rock wall by Outdoor Pursuits staff. This will include a collection of qualitative and quantitative data alongside the successful development of an instrument to measure rock climbing participant attitudes and feelings, and the success of the program.

Limitations

The project is limited by the access to funding and resources required to purchase gear or pay extra staff for support. Additional limitations to the project include the pool of participants, participant retention, project coordination, and training. These are limitations to the project because adaptive systems can be incredibly expensive to purchase. Systems that require extra staffing can also be perceived as a barrier as it is hard to allocate money in the budget or know when the services will be needed, and extra staffing creates a greater cost for the program. Lastly, training is a limitation because it is difficult to gather large groups of students at one time and the training will have to be held often to ensure staff is able to employ systems when needed.

Definition of Terms

With reference to the various aspects of rock climbing and systems needed for adaptive rock climbing the following terms are defined:

- (1) AMGA: The American Mountain Guide Association (Constanzo, Legaspi, & Mak, 2013). The AMGA is a governing body for acceptable practices and education standards.
- (2) ATC: Air Traffic Control Device (Constanzo, Legaspi, & Mak, 2013). These devices are used in belaying and rappelling.
- (3) Yosemite Decimal System: A grading system developed in California in the 1950's to more accurately describe the difficulty of routes (Constanzo, Legaspi, & Mak, 2013).
- (4) Bouldering: a form of rock climbing that does not require any protection to be placed prior to or during climbing, relies on mats and crash pads to cushion falls. Bouldering usually occurs at lower heights than top roping (Constanzo, Legaspi, & Mak, 2013).
- (5) Top Roping: a form of rock climbing where the anchor point and the rope are above the climber, typically on top of a wall or a cliff, prior to when the climber begins their ascent (Constanzo, Legaspi, & Mak, 2013).
- (6) Route: the path the climber takes up the wall (Constanzo, Legaspi, & Mak, 2013).
- (7) Beta: the sequence of movement used to complete a route, usually varies by person (Constanzo, Legaspi, & Mak, 2013).

- (8) Active Hands: an option for participants who may have limited hand strength, these are glove-like with a gripping aid that Velcros into position (Paradox Sports, 2015).
- (9) ARC Harness: a harness made by Misty Mountain, this system is typically used for participants who have more severe limitations. This seated harness has a thickly padded seat with full back support (Paradox Sports, 2015).
- (10) Easy Seat Harness: a harness made by Misty Mountain, which allows for the participant to remain in a seated position. This harness includes a chest harness to aid the participant in sitting upright, with a padded and rigid seat to minimize sores this harness is typically used with a mechanical advantage system (Paradox Sports, 2015).
- (11) Side Climber/Side Climbing: a process in which another individual climbs next to a participant and provides assistance. This may be verbal encouragement or physical/tactile by placing limbs (Paradox Sports, 2015).
- (12) 1:1 System (basic ascending): this system provides no mechanical advantage to the climber but requires full grip and upper body strength (Paradox Sports, 2015). This way of ascending is doing repeated pullups to move up the wall.
- (13) 1:1 Redirect: fast set up, with low friction that provides some advantage for climbers who need a little boost (Paradox Sports, 2015).
- (14) Mechanical Advantage System: a process in which various mechanisms or systems are used to allow a climber to move up the wall by allowing them to

hold less than their full weight (Paradox Sports, 2015). There are many different mechanical advantage systems, including 2:1, 3:1, 4:1 and 5:1.

(15) Assisted (power) Belay: a process in which the belayer locks off and uses their weight to help move the climber up the wall (Paradox Sports, 2015).

(16) 1:1 System (basic ascending): to build this system two locking carabiners anchored to a single strand of rope, two ascenders, sit harness and chest harness (if necessary), are all required. Once the system has been hauled to the master point and the participant clipped in and placed on belay, they can begin engaging the cam and moving up the rope (Paradox Sports, 2015).

This is not a mechanical advantage system.

(17) 1:1 Redirect: this set up is remarkably similar to that of the 1:1 system for basic ascension, the participant is tied in to one strand of rope and they system is set up on the other and placed on belay. The rope used in this system will need to be static and two times the height of the wall. A progressive capture device in place will allow the participant to rest between pulls (Paradox Sports, 2015).

(18) 2:1 Mechanical Advantage System: is an easy to rig system, that provides a significant amount of mechanical advantage. A simple pulley at the top and a progressive capture device are required, the device will get clipped to the harness and an ascender will be used to help grip the rope and move up. The rope used in this system will need to be three times the height of the wall.

(Paradox Sports, 2015).

- (19) 3:1 Mechanical Advantage System: this system is the most useful for the widest range of adaptive climbers. For this system, the participant needs to have the strength to move one third of their body mass. For this system, there will be a double pulley at the top and a progressive capture device clipped into the harness, the rope for this system needs to be four times the height of the wall (Paradox Sports, 2015).
- (20) 4:1 Mechanical Advantage System: this system offers mechanical advantage for participants with limited strength and mobility in the arms and body. Using a double pulley at the top and a progressive capture single pulley clipped into the harness, the rope for this system needs to be five times the height of the wall (Paradox Sports, 2015).
- (21) 5:1 Mechanical Advantage System: system used with participants with extremely limited mobility and strength in both the arms and body. This system used a dual pulley and a progressive capture device at the top and a dual pulley clipped to the participants harness, the rope for this system must be six times the height of the wall (Paradox Sports, 2015).

CHAPTER TWO

REVIEW OF LITERATURE

This chapter reviews the literature related to the discussion of the necessity for an adaptive rock climbing curriculum for the State University of New York College at Cortland's campus recreation program, Outdoor Pursuits. This information is being explored as a means of increasing inclusivity in the programs that Outdoor Pursuits offers, specifically the climbing wall. Barriers, benefits, and inclusive factors relating to individuals with functional differences will be reviewed. This literature review includes the following sections: (1) introduction; (2) values associated with implementing inclusive programming; (3) current models of adaptive outdoor recreation programs; (4) benefits of participation for individuals with functional differences; (5) barriers and constraints related to participation; (6) developing an adaptive rock climbing curriculum and (7) summary.

Introduction

A needs assessment, conducted by this researcher, has identified that SUNY Cortland's Recreational Sports and Outdoor Pursuits Program has a need for a curriculum and resource guide pertaining to adaptive rock climbing. The service-delivery model for

the Outdoor Pursuits program is campus recreation. The Outdoor Pursuits program currently serves individuals who are typically developed and able-bodied but does not offer programs for those who have functional differences. It is not widely accepted by organizations such as NIRSA, or across higher education, that campus recreation programming includes the campus commitment to offering adaptive and inclusive services. However, it is important that campus recreation programs begin transitioning toward the provision of a continuum of services for a broader spectrum of individuals with and without functional differences. This transition to inclusive and adaptive programming allows all individuals to participate in activities that normally they would not have a chance to. To make these changes, higher education institutions, such as Colorado State University, have begun creating inclusivity committees comprised of students, faculty, and staff members that meet to make recommendations for changes. Recommendations may include, introduction of adaptive equipment, improved equity, enhanced diversity and inclusion (EDI) training, and the provision of departmental assessments (“Inclusivity”, n.d.). Becoming a program that offers these services would align with many other larger universities across the country in providing all-gendered changing areas and locker rooms, private areas for nursing mothers, and providing Americans with Disabilities Act (ADA) compliant facilities, equipment, and programs that are available at all times (“Inclusive Recreation, n.d.). Beyond Colorado State University there were a few other universities that had successfully instituted adaptive and inclusive programming. These included Towson University, University of Colorado Boulder, and Colorado State University. The researcher found these universities to stand out in the amount of marketing used for their programs, the transparency of the programs,

and the availability of opportunities. In addition to these universities' programs, the National Intramural and Recreational Sports Association (NIRSA) has been promoting equity, diversity, and inclusion (EDI) in their programming since 2017; however, beyond the work of this handful of universities and the NIRSA, there remains a lack of promotion for adaptive programming (Islam, 2017).

The institution of adaptive and inclusive programming stems from a principles and policy base. Inclusive programming is not typically focused on economic outcomes as most campus recreation programs do not charge for them. Moreover, the services, that campus recreation programs offer are paid for by set student fees that are part of each individual's college tuition.

Individuals who seek out SUNY Cortland's Outdoor Pursuits and Recreational Sports programming are often seeking to increase their overall health, well-being, and quality of life. Thus, there is an essential need for the expansion of services at SUNY Cortland's Outdoor Pursuits. An expansion of services to include adaptive rock climbing will increase the participant base. However, for the purposes of this project and the development of inclusive services at SUNY Cortland Outdoor Pursuits, and specifically the rock climbing wall, it is imperative to identify, program benefits, barriers, and values related to participation. This data can be collected via the administration of a program needs assessment. Beyond the completed needs assessment, this project will include a cohesive and comprehensive document that includes aspects of program curricula, service delivery models, staffing considerations, staff training, and a layout of all adaptive rock climbing systems.

The development of a comprehensive and adaptive rock climbing curriculum for a

program, such as Outdoor Pursuits, may allow other campuses to create and expand their practices as well. To accomplish this, this literature review will consider all operational aspects of an adaptive program, administrative process, and important information specific to rock climbing. Due to the lack of research on adaptive climbing programming, there is an acute need for research on the necessity for such programming and its benefits, value, and barriers related to recreation participation for individuals with functional differences. Aspects of program curricula, service delivery models, and staffing should be taken into consideration and examined in further detail. Discovering what a comprehensive adaptive rock climbing curriculum for a program, such as, SUNY Cortland's Outdoor Pursuits, can do, may allow other similar campus recreation programs to expand and adapt their programs to include all possible participants. To do this, the literature review will now consider all operational aspects of an adaptive climbing program from both a programmatic and an administrative perspective.

Values Associated with Implementing Adaptive Programming

According to Forrester, (2014), campus recreation programs are important for the college community and can assist with “student recruitment, retention, health and wellbeing, as well as student learning outcomes and post-graduation employment success” (p. 4). However, inclusive campus recreation programs are often overlooked, under-staffed or do not exist at all (Leyser & Kirk, 2004).

Inclusive recreation programs are of the utmost importance when providing services, creating a standard of care, and attaining normalization for individuals with

functional differences that involve social inclusion, health, and wellness (Wright & Titus, 2013). In many other states, and at many other larger universities and institutions, adaptive and inclusive programming is becoming the standard level of care with adaptive equipment or services available directly or upon request (“Inclusive recreation”, (n.d.); “Inclusivity”, (n.d.); “What is inclusive recreation”, (2019)). These programs would contribute to creating an atmosphere of inclusion that would work on not only physical needs, but also the social needs, and adaptability for individuals with different levels of abilities and functional differences. Socialization and diversity will help to create a more stable program that meets the needs of more individuals.

The successful creation of an adaptive inclusive program requires the program to provide supports to individuals with physical and/or cognitive functional differences and ensure a positive social atmosphere for all (McAvoy, Smith, & Rynders, 2006). The facilitation of programs should focus on improving communication, socialization, and the health and well-being of participants (McAvoy, Smith, & Rynders, 2006). Individuals who seek out inclusive programming will each have different individual goals. An individual’s goal may be to make it to the top of the rock wall using holds, or to say that they were able to self-ascend a rope. In this situation, it is important that both the program and the staff can help the participant reach that goal by modifying and adapting the current program based on their wants and needs.

Inclusive programming states that participants with functional differences are integrated with participants who do not have functional differences. It is important that both individuals with and without functional differences are able to be brought together in programming and have the ability to be present in a positive atmosphere. Staff

members should understand the varying goals within the participants, thus minimizing or eliminating negative perceptions and experiences. Adapting a zero-tolerance policy for negativity and exclusion is an important policy to integrate into any inclusive and/or adaptive programming because this allows the facility to create a more positive and welcoming atmosphere. Although creating a welcoming environment does not align with current ADA legal requirements many campus recreation programs are still trying to utilize a welcoming and positive atmosphere as best practice (Young, et al., 2016).

As inclusive programming is implemented in campus recreation it is important that staff are trained appropriately. That signage, manuals, websites, and staff use and include positive inclusive language (Young et al., 2016). Trainings through the National Ability Center and Paradox Sports would be particularly beneficial. Beyond basic training on the equipment and implementation of the program, staff should also be educated on awareness and sensitivity in relation to individuals with functional differences and their needs (Leyser & Kirk, 2004). Staff members should also be able to evaluate the effectiveness of a program towards an individual's goal (Leyser & Kirk, 2004). When training and environmental factors are taken into consideration and monitored, a successful inclusive and adaptive program should be present.

Participants in adaptive and inclusive programming are looking for activities in which they can challenge themselves and community in which they can relate to and be understood by. However, these participants, also want to break down social stigmas and be a part of the larger whole. Many of these participants do not want to be seen as someone who is "disabled" they want to be seen as someone who is "differently abled". The integration of participants with varying levels of abilities allows for social barriers,

stereotypical thoughts, preconceived notions, and misconceptions to be broken down.

The breaking down of these thought patterns allows for individuals to create a close-knit community that showcases uniqueness (DeMartino, 2016).

Current Models of Adaptive Recreation Programs

This section examines some of the more prominent adaptive and inclusive program models. Of these program models; Wilderness Inquiry, Outward Bound, and Adaptive Adventures are outdoor recreation oriented, while NIRSA programs are more focused on campus recreation. Paradox Sports, National Ability Center, Disabled Sports USA, and National Sports Center for the Disabled bridging the gap in ideology and provision of services. By identifying organizations within the recreation field that offer adaptive and inclusive programming it allows for more depth and validity to the claims for the necessity of such programs.

Wilderness Inquiry

Wilderness Inquiry is a non-profit organization that provides individuals with and without functional differences the opportunity to learn and develop inclusive outdoor wilderness skills and experiences. Wilderness Inquiry believes that social integration is important for the development and success of individuals and their leisure experiences. In actualizing this belief, Wilderness Inquiry offers many different programs with varying levels of difficulty, including Gateway programs for individuals who are unsure about participation or would like an introductory course (Wilderness Inquiry, n.d.).

Outward Bound

Outward Bound is a non-profit organization aiming to educate participants through experiential, hands-on learning in the outdoors. Outward Bound's programs are intended to be taught in a natural, outdoor context void of the distractions of society and typical daily tasks and routines. Programs from Outward Bound are designed for young individuals from underserved populations, both with and without functional differences. Outward Bound's mission in providing these services is to aid in participants' self-discovery, confidence and character development, and provide experiential and wilderness education outreach (Outward Bound, n.d.).

Adaptive Adventures

Adaptive Adventures is a non-profit organization that specializes in mobility for all. Their mission is to provide outdoor opportunities that improve the quality of life across the lifespan. Created by two individuals with functional differences, Adaptive Adventures understands and focuses on the need for adventure and sports programs specifically for individuals with functional differences and their families. Adaptive Adventures travels the United States with outdoor equipment to provide services to individuals in underserved parts of the country (Adaptive Adventures, n.d.).

Paradox Sports

Paradox Sports is a non-profit, 501(c)(3), organization heavily sponsored by Petzl and The North Face. Founded in 2007, Paradox Sports' mission is to provide adaptive rock climbing opportunities for individuals with physical disabilities (Paradox Sports, n.d.). Paradox Sports allows individuals to have competitive and noncompetitive opportunities defying the traditional conventions of sport. By focusing heavily on the social aspects of their programs, Paradox Sports assists in empowering individuals,

building and strengthening communities, and helping demonstrate that ability does not hinder one's opportunity to participate or be successful. Paradox Sports also seeks to ensure personal growth, compassion, dignity, and fun from all their programs. Paradox Sports runs programs across the United States, and trains climbing gyms around the country to provide a higher standard of care to individuals.

National Ability Center

National Ability Center is a non-profit organization that supports individuals with functional differences in building skills and competencies across their interdisciplinary adaptive sport and recreation programs. National Ability Center focuses on the importance of inclusive community-based recreation programs and settings. Recreational lessons are taught and created in an effort to serve individual and family needs. The National Ability Center will conduct needs-based assessments with each individual participant prior to their participation in any given program, thus documenting their baseline performance, performance throughout the program, and their growth afterwards (National Ability Center, n.d.).

Disabled Sport USA

Disabled Sports USA is a non-profit organization specializing in multi-sport, multi-disability programs for individuals in the United States. Their mission is to improve quality of life through a variety of recreation programs offered to a variety of individuals with functional differences. Disabled Sports USA is a community-based program allowing individuals across the country to be reached by their effects. The benefits perceived from programs run by Disabled Sports USA are known as immeasurable, allowing individuals to enjoy the outdoors again and continue living their

lives (Disabled Sports USA, n.d.).

The National Sports Center for the Disabled

National Sports Center for the Disabled (NCSD) is one of the largest Therapeutic Recreation non-profit organizations in the world. NCSD provides programs that serve youth and adults with functional differences. Their mission is to enable the human spirit through therapeutic recreation and sports. NSCD is a world-wide recognized organization providing opportunities for individuals to develop their leadership skills, build self-confidence, and expertise. Their programs range from action sports to competitive programs (NSCD, n.d.).

National Intramural and Recreational Sports Association

National Intramural and Recreational Sports Association (NIRSA) preferably goes by NIRSA: Leaders in Collegiate Recreation. NIRSA is an organization that helps to regulate various sports that take place in the college system (National Intramural and Recreational Sports Association [NIRSA], 2019). NIRSA's mission is to be a leader in higher education, recreation, sports and to provide educational and professional development opportunities through delineating information, gathering research, setting standards and promoting diversity, inclusion and opportunities for growth for all students (NIRSA, 2019). Although NIRSA is not directly aligned with adaptive and inclusive programming for individuals with functional differences, their organization is important in governing decisions and setting standards for all campus recreation programs such as SUNY Cortland Outdoor Pursuits.

Programs like Paradox Sports, the National Sports Center for the Disabled, Disabled Sports USA, National Ability Center, Outward Bound, Adaptive Adventures,

and Wilderness Inquiry are incredibly important for adaptive and inclusive programming. Many of these programs were the first of their kind and are still gaining membership and strengthening their bases and relations with individuals who have functional differences. These programs are incredibly valuable for providing recreation programming to individuals who might otherwise not be able or welcomed in participation. These programs also allow participants to reap benefits of physical and mental health through sport, exercise and community. In the following section, benefits of participation will be talked about in greater value.

Benefits of Participation for Individuals with Functional Differences

Through a cross-sectional analysis of many different studies, scholarly articles, and research journals, research has shown a trend in positive benefits to adaptive and inclusive recreation programming. Research has shown that recreation and leisure have positive effects on holistic health, including mental, physical, and physiological (Coleman & Iso-Ahola, 1993). A study by Coleman and Iso-Ahola (1993) has also shown that participants in adaptive and inclusive programming have been shown to have a “mastery of self-esteem”, post-participation. Leyser and Kirk (2004) also identified inclusion and mainstreaming benefits for individuals with functional differences. In Leyser and Kirk’s (2004) study, despite the inclusion of the children for participation in inclusive programming, parents still harbored concerns about participation but also recognized that their child’s participation would lead to learning. Leyser and Kirk (2004) found that participants in their study were able to better prepare

for real-life, had an increased self-concept, and an enhanced awareness for others post-participation in adaptive and inclusive programming. Coleman and Iso-Ahola (1993) also identified that the individuals who participated in adaptive and inclusive programs showed that positive social interactions can lead to increased companionship and can even lead to the elimination of loneliness. This information is important to recognize and take into account when developing programming.

Individuals who seek participation in recreation and leisure are often looking for many different benefits ranging from mental to physical to even social benefits from participation. McAvoy et al., (2006) found that social acceptance is a significant factor in participation. Coleman and Iso-Ahola (1993) identified in their research that leisure based social support and leisure generated self-determination can be identified as mediators on the stress-health relationship. The self-determination model is important for participants to seek an avenue for stress alleviation using healthy coping mechanisms. In post-trip and post-program evaluations it was found that individuals who participated showed a perceived gain of skills and high satisfaction (McAvoy, Smith, & Rynders, 2006). Participation in leisure activities has also been shown to increase and maintain mental as well as physical health and wellness which may, in turn, foster greater self-determination among participants (Coleman & Iso-Ahola, 1993).

Individuals who participate in outdoor and experiential education programs, such as those run by Wilderness Inquiry and Outward Bound, have been shown to make great strides in their physiological development and retention of skills as well as their self-confidence, socialization skills and tolerance for others (McAvoy, Smith, & Rynders, 2006). It is important to note, however, that limitations of individuals should not

automatically rule out individuals with functional differences. While there has been significant progress in this regard since the passage of the Americans with Disabilities Act in 1990 adaptive and inclusive programs can still face insurmountable challenges (McAvoy, Smith, & Rynders, 2006). As McAvoy et al., (2006) identified in their research, individuals who perceived positive benefits from outdoor programming and experiential education demonstrated greater personal growth, including heightened self-views and the realization of potential. In the same study, McAvoy et al, (2006) also found that at the conclusion of recreation and leisure activities, participants had gained a sense of accomplishment, due to having learned skills and/or partaking in an activity that the individual thought they could not complete or achieve. Beyond their increased sense of accomplishment, individuals who experience self-directed leisure experienced greater personal growth, learned more leisure skills and techniques, were more socially literate, and had developed stronger coping mechanisms (McAvoy et al., 2006).

When focusing more specifically on adaptive rock climbing, climbers are pushing boundaries and accomplishing more than ever before, and it has been stated that these individuals are taking the “dis”- out of disability (DeMartino, 2016). When attending adaptive programming individuals are given hope and are thriving, they are quickly learning that others have similar conditions and lived experiences (DeMartino, 2016). DeMartino (2016) in a *Climbing Magazine* issue talked about adaptive climbers and their unwillingness to quit. DeMartino (2016) also noted, how, for some, becoming an amputee or post-accident, it is not uncommon to ask the question “who am I now”, and to be searching for peace and comfort moving forward in their new reality. In 2005, the Extremity Games took place, this event allowed for amputees and individuals with

functional differences alike to gather, compete, connect with others, empower others, support others, adapt, and thrive (DeMartino, 2016). DeMartino (2016) says that activities and events such as these pull athletes with functional differences out of the woodwork or “vacuum” and allow them to find a unique tribe within a much larger community. Although, this research was conducted on a semi-professional to professional circuit, it is possible to see how young children or college-aged students could also perceive such great benefits from an adaptive and inclusive program or programs.

Although McAvoy et al.’s (2006) research suggests that personal growth and self-motivation are vital in adaptive programming, research such as Zabriskie and McCormick (2001) and Orthner and Mancini (1990), suggest that familial influences are also a crucial factor in adaptive programming. Field and Hoffman (1999) focus on self-determination and its effects on leisure participation. Crawford and Godbey (1987) and Burns and Graefe (2007) focus on leisure constraints to participation. Whereas Coleman and Iso-Ahola (1993) suggest that leisure participation does not lead to self-determination, but leisure experience does lead to a self-determination disposition of individuals by their use of choice and discretion.

There are multiple important models when thinking of adaptive programming. Research by Zabriskie and McCormick, (2001) showed a high correlation between family recreation and leisure leading to satisfaction and bonding. Orthner and Mancini (1990) also identified in their research that while there has been a significant change and transformation for family’s leisure time; this shifted from spending time while working to then seeking out separate leisure time to spend together. Orthner and Mancini (1990) stated that these families, as seen in the family systems theory are

dependent on the reconciliation of differences and diverging wants and needs in order to satisfy their larger goals of leisure and recreation. Zabriskie and McCormick, (2001) used family leisure model and a family systems theory to provide a framework that illustrated how individual goals can become directed, self-correcting, dynamic, interconnected, and may be affected based on the environment and qualities within everyone's family. This theory stems from Zabriskie and McCormick's (2001) belief that families are the fundamental units of society. Family systems theory allows for individuals with functional differences to use their family support to lead to greater satisfaction within their chosen activity. The family systems theory is important for both the affected individual and the individuals around them, as sometimes individuals with functional differences have trouble bonding and sharing experiences with others. Family systems theory looks rules and their enforcement this provides opportunities for family members to interact and play, as well as open up more possibilities changing environments and novelty (Zabriskie & McCormick, 2001).

Although the family systems theory is important, the self-determination model can also be used as a theoretical framework for providing services. Coleman and Iso-Ahola (1993) stated in their research that individuals who have a personality characterized by self-determination will be more likely to have hardiness, internality of control, and resistance to illness. The self-determination model can be used in special education and services for individuals with functional differences and can thus be translated into recreation and leisure. The self-determination model as identified and described by Field and Hoffman (1999) places an emphasis on family involvement stating that it can greatly affect development and the expression of self-determination.

Field and Hoffmann (1999) defined self-determination as:

“a combination of skills, knowledge and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behaviors when acting on the basis of these skills and attitudes individuals have greater ability to take control of their lives and assume the role of successful adults in our society” (p. 36).

This model includes five major components that require participants and families to know themselves, value themselves, plan, act, and experience outcomes through learning (Field & Hoffman, 1999). Moving along with the changing view of functional differences, adaptive, and inclusive programming self-determination skills are strongly influenced by the type of role-models (Field & Hoffman, 1999). With college-aged students, their role-models would likely more closely align with those on the semi-professional and professional circuit as well as their family members. This model could be instituted with the provision of services at SUNY Cortland Outdoor Pursuits by ensuring that individuals who are participating are engaged, and perceiving benefits in their participation in adaptive and inclusive programming. This model would allow for deeper understanding, satisfaction, and personal growth in participation, which would be important not only for the participant, but also for the program as it gains credibility and a larger participant base.

Despite the knowledge and use of theories for planning and programming adaptive and inclusive services, there is still a breakdown between theory and practice that creates gaps in provided services. The inclusion of individuals with functional differences includes their perception of both social and emotional benefits for those who participate in the activities or programs (Leyser & Kirk, 2004). Concerns over inclusion of individuals with functional differences and their families, originally came from the

families and parents of those with functional differences themselves. These concerns often reflected problems with providing transportation, staffing, program quality, and the loss of services to name just a few examples (Leyser & Kirk, 2004). The lack of adaptive and inclusive services and programming at SUNY Cortland shows a gap in ideology and a possible lack of commitment in providing services for all individuals. At this time, there is little to no training available for sensitivity, ADA compliance, or specific job or program training for working with individuals with functional differences. This gap, between stated ideology and practice, illustrates the need for the inclusion and adaptability of services for individuals with functional differences and their families. Although instituting a family services based program would not work at SUNY Cortland, due to barriers on who can use the facilities, instituting some of the theory of a family services model in conjunction with other models like the leisure constraints model would. A program that allows for individuals with functional differences to recreate with their trusted friends or sensitive and knowledgeable staff members would allow for perceived benefits including self-determination, self-efficacy, community, increased participation, and setting and accomplishing goals. The following section will take a closer look at leisure constraints and how adaptive programs can help mitigate them.

Barriers and Constraints Related to Participation in Recreation

When directly related to recreation and leisure, barriers are defined as conditions or events that prevent individuals or families from participating in and receiving benefits from recreation and leisure experiences (Orthner & Mancini,

1990). Barriers and constraints to participation in activities are clearly defined in the leisure constraint theory. Crawford and Godbey (1987) identified that public leisure service agencies are concerned with barriers to participation because these agencies want to increase and improve service delivery. Crawford and Godbey (1987) suggested that research on barriers and constraints to leisure participation is usually atheoretical, in which it is assumed that relationships among leisure preferences and participation are due to one of two factors: the leisure preference exists then a barrier intervenes and results in non-participation, or if no barriers intervene the individual will participate. This information from Crawford and Godbey (1987), suggests that studies have neglected to fully examine leisure barriers and constraints.

The leisure constraints theory stems from a hierarchical model of leisure barriers and constraints developed by Crawford and Godbey (1987). In the model Crawford and Godbey (1987) identified three types of constraints on leisure participation: structural, interpersonal, and intrapersonal. Structural constraints are not commonly conceptualized and are often external, directly correlating to whether an individual chooses to participate in an activity (Burns & Graefe, 2007). Structural constraints many include socioeconomic status, financial status, awareness of leisure activities, lack of skilled and trained professionals, architectural constraints, and lack of time (Burns & Graefe, 2007).

Intrapersonal constraints are often defined as the components that affect an individual's decision-making process and intrinsic motivations these are usually based on psychological states and attributes (Crawford & Godbey, 1987). Interpersonal factors often include items such as: perceived physical condition, competencies, attitudes and

beliefs based on previous experiences these constraints are also often focused on interpersonal interactions and relationships between individual characteristics (Crawford & Godbey 1987). Interpersonal constraints are large proponents in an individual's leisure interests. These constraints are also seen as inconsistent, likely to change over time as individuals grow and develop and as their interests change (Burns & Graefe, 2007). Often interpersonal barriers are caused by individuals being socially misunderstood (Burns & Graefe, 2007). Interpersonal constraints may include things such as stress, fear or anxiety, and social influences (Burns & Graefe, 2007).

Research identifies that parent/caregiver guidance plays a large role in the decision-making process for recreation and leisure activities (Leyser & Kirk, 2004). Leyser and Kirk's (2004) research also identified that children are often deterred from participation by parental questions and hesitation over the safety and legitimacy of the programs being offered (Leyser & Kirk, 2004). When looking at this, these parental questions and concerns that may decrease participation can be tied back to the leisure constraint theory. For example, parental questions, hesitations, and specific viewpoints could represent interpersonal barriers. These barriers can affect connections with others, affect leisure interests, and can cause inconsistent participation that is likely to change over time (Orthner & Mancini, 1990).

Parental concerns about safety, financial status, or awareness of the activity itself would be considered structural constraints. These barriers directly correlate to participation in an activity. By a program mitigating these barriers or eliminating them all together it allows for a greater participation base in programs and activities. Lastly, a participants' concerns about attitudes, beliefs, or social influences would be an example

of intrapersonal barriers to participation. These barriers are the most influential as they are intrinsic and affect the decision making process. By creating programs that are open, welcoming, and that are inclusive and adaptive, individuals are more likely to try and overcome their interpersonal barriers to try something new. SUNY Cortland's Outdoor Pursuits could help mitigate all three of these categories of barriers defined in the leisure constraints theory by becoming more knowledgeable about the theory, and by implementing important pieces into their programming to ensure satisfaction and to increase their participant base.

Developing an Adaptive Rock Climbing Curriculum

Burns and Graefe (2007) identified in their research that data from the National Survey on Recreation and Environment (NSRE) showed mixed results in relationships between recreation participation and the participation of individuals with functional differences when focusing on specific activities whereas when focusing more broadly on participation individuals with functional differences participated in less activity than their peers. The creation of a barrier-free leisure opportunity should be a priority of any recreation program (Burns & Graefe, 2007). The importance of creating a barrier-free leisure or recreation opportunity on a college campus will allow for greater participation and increased satisfaction. By following the leisure constraints theory and instituting adaptive and inclusive programming SUNY Cortland would open greater possibilities for affiliated individuals, faculty, staff, and students. By implementing policies aligned with

and acknowledging leisure constraints, SUNY Cortland could adapt and provide a stronger foundation upon which to program activities and services. When providing services and programs, SUNY Cortland should consider how they can mitigate structural and interpersonal barriers directly, while indirectly taking into account intrapersonal barriers.

Focusing on peoples' similarities rather than their differences encourages support, acceptance, and social integration of individuals with and without functional differences and fosters a positive environment. This person-centered focus is critical when planning a curriculum for an adaptive climbing program. Beyond person-centeredness, creating a curriculum for an adaptive program involves focusing on holistic principles, establishing a clear mission, vision and values with attainable goals for all possible participants', and continuous staff trainings. The information and service delivery models identified earlier in the literature review will assist in instituting programming. The resultant programming considers both the leisure constraint theory and its three types of barriers, as well as family systems theory. The use of both these theories will assist in mitigating gaps in programming and ideology that have been identified, via the need's assessment, at SUNY Cortland.

The program layout should be designed to include activities that individuals can feel in control of and to stimulate participants to set attainable goals for participation in various areas. The program should also include varying levels of activity, allowing individuals with different strengths and goals to still participate, meet their goals, and perceive benefits (Robb & Ewert, 1987). In this context, varying levels include an introductory level beginning with a "crash-course" in rock climbing. At the intermediate

level, the individual develops more advanced skills in one or more aspects of climbing. Finally, the advanced level is for those who have participated in rock-climbing before and are well-aware of the potential risks. These climbers although advanced, will most likely not be climbing independently, they will be climbing using an adaptive system and potentially community support. Being aware of the risks includes acknowledging that although on top-rope and back-up belay accidents can still occur and injuries can still occur, especially soft tissue and skin injuries. The program model also helps to address the risks and different levels of participation through the adaptive rock climbing services and the staff trainings given to ensure that legal liability, properly trained staff, and an increase in participants that are not in segregated programs occurs (Robb & Ewert, 1987).

Research has identified that staff members in these programs often feel underprepared and less comfortable with planning and provision of adaptive and inclusive services (McAvoy, Smith, & Rynders, 2006). To combat these feelings, it is important to complete an all-inclusive introductory orientation of staff training. This training orientation would be provided for supervisors to train frontline staff and come complete with a training manual and a resource guide. This introductory training can be given in conjunction with other regular training and workshops to practice skills. Training helps to reinforce inclusive values and principles and create a safe and positive environment in which participants can learn, grow, and recreate. By creating this environment, not only do participants gain more opportunities to participate in activities, but they also have more opportunities for personal growth, health, wellness, and for fostering a greater sense of community.

Summary

In summary, the research used in completion of this comprehensive literature review provides pertinent information over a broad selection of components necessary to develop a successful campus recreation based adaptive rock climbing curriculum. Current research also identifies some possible limitations and challenges in creating an adaptive climbing curriculum. A problem exacerbated by the dearth of research available on adaptive programming development in outdoor pursuits. An adaptive climbing curriculum is important in continuing to reach the goals of SUNY Cortland Outdoor pursuits specifically as well as the Recreation, Parks and Leisure Studies Department, and the wider SUNY Cortland campus community. It is of the utmost importance that all individuals receive the same leisure and recreation opportunities and that there are policies and procedures in place help this to happen. Research highlighted gaps in the locations of adaptive climbing programming offered and the necessity for a wider availability of programs for all individuals to take part in, as adaptive programming for many different ability levels remains unexplored (Dyken, 2012).

CHAPTER THREE

METHODS AND PROCEDURES

Introduction

SUNY Cortland values inclusivity, and allowing all individuals to participate in activities when provided justified and reasonable accommodations. Currently, the Student Life Center (SLC) climbing program is not inclusive to individuals with functional differences. To remedy this problem, a needs assessment was created and analyzed to aid in the development of a new staff training guide and resource manual. A comprehensive training guide and resource manual was developed to allow for a blueprint of programming and training that Outdoor Pursuits staff at the SLC can refer to when necessary. To effectively complete this process, a needs assessment was given to Outdoor Pursuits and analyzed to identify the strengths, weaknesses, opportunities, and threats to the program as well as their goals for the future.

Project Description

The purpose of this project was to provide SUNY Cortland Outdoor Pursuits with the resources they need to be successful in implementing an adaptive and inclusive climbing program in the future. Thus, this project includes the completion of a program needs assessment, development of a training guide for staff trainings, and the creation of a manual that includes all the adaptive climbing systems, technical information, and resources needed to assist in the delivery of programs.

The following are objectives specific to the Master's Project:

Objective One: Develop a needs assessment questionnaire.

Objective Two: Administer needs assessment questionnaire to Outdoor Pursuits.

- a. Distributed via email one week in advance to a scheduled in-person interview.
- b. Conduct recorded conversation with the assistant director of the organization.

Objective Three: Analyze the needs assessment and identify the following:

- a. Areas for further program development, program improvement and program expansion.

Objective Four: Post-interview, develop a comprehensive curriculum including a resource manual and staff training guide specific to the needs of SUNY Cortland Outdoor Pursuits and its participants.

The following are objectives specific to SUNY Cortland Outdoor Pursuits program and its staff:

Objective One: Complete a program needs assessment regarding adaptive programming

Objective Two: Create a training manual that provides information on adaptive climbing systems and techniques.

Objective Three: Create a training program that trains staff on the techniques shown in the manual as well as cultural humility as it relates to adaptive sports

Objective Four: Develop a standardized assessment to ensure facility staff are able to operate adaptive rock climbing systems safely and appropriately

Objective Five: Establish an ongoing training schedule for all OP staff to ensure an ongoing ability to offer adaptive programming.

Background of Participating Agency

SUNY Cortland Outdoor Pursuits is a department run under Recreational Sports in the Student Life Center located on campus. The Student Life Center, and Outdoor Pursuits, was founded in 2015. The foundation of this center allowed for student recreation, health, and wellness in one centralized location on campus. Outdoor Pursuits was founded in order to allow students a way to access gear and equipment they may not otherwise have been able to for - trips and other recreational uses. The mission of Outdoor Pursuits is to provide transformational education by bringing the SUNY Cortland community into the outdoors (Outdoor Pursuits Mission Statement, n.d.). This takes place using experiential and non-formal education to build leadership skills, a sense of place, resiliency, and to foster a sense of community. The values of outdoor pursuits are known as the five pillars, these five pillars represent the services they want to give as

well as the leaders they want to develop in their program (SUNY Cortland Recreational Sports Newsletter: Outdoor Pursuits, 2015). The five pillars include: tenable, health, craftsmanship, growth, and family (SUNY Cortland Recreational Sports Newsletter: Outdoor Pursuits, 2015). Outdoor Pursuits sees tenability as teaching responsibility and intentionality, health as nurturing and focused on well-being of individuals, craftsmanship as having pride and intentionality in all that one does, growth as learning new skills that will shape a lifetime, and family as community and friendships (SUNY Cortland Recreational Sports Newsletter: Outdoor Pursuits, 2015).

The SLC opened in 2015, offering Outdoor Pursuits and a climbing facility as well as a gym, running track, and other recreation amenities. After the facility opened and was ready for student use a Recreation, Parks and Leisure Studies (RPLS) graduate student Chloe Crawford and SUNY Cortland Physical Education Professor John T. Foley, invited Paradox Sports to come to SUNY Cortland's facility provide training and host an adaptive climbing event for the individuals who were involved in the program and interested at the time. More recently, an American Mountain Guide Association (AMGA) guide came to SUNY Cortland to teach some of the RPLS students more about adaptive climbing systems to be used in the outdoors. To date, these have been the only adaptive climbing that SUNY Cortland's climbing wall has seen, except for a recent independent study run by RPLS department member Christopher Bode.

Target Population

The purpose of this program is to provide a blueprint from which Outdoor Pursuits can develop and provide programmed services to individuals with varying physical abilities.

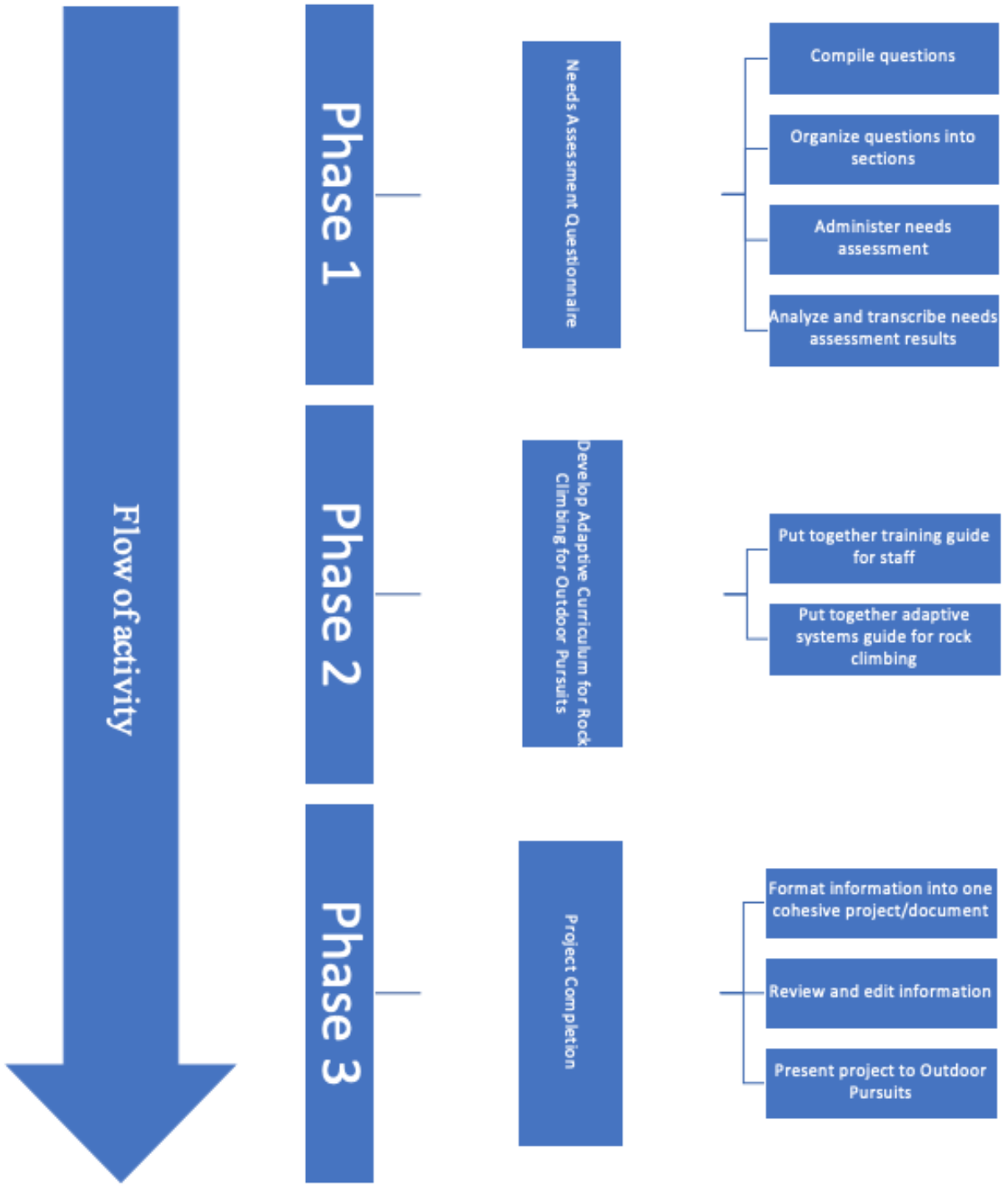
The target population for this program includes SUNY Cortland affiliated individuals including, but not limited to, staff, alumni, students, and families of affiliates. The, SUNY Cortland Outdoor Pursuits Assistant Director, Connor Cumisky is aware of the project details and was given a copy of the prospectus. This target population should encompass all SUNY Cortland affiliated individuals who wish to participate in climbing activities and have physical, emotional, intellectual, behavioral, learning and/or speech impairments.

Procedural Steps for Project Completion

The project will be conducted as follows:

- 1) Develop a needs assessment interview.
 - a. Develop needs assessment interview
 - b. Review and revise needs assessment
- 2) Contact and confirm interview with SUNY Cortland Outdoor Pursuits
- 3) Administer needs assessment.
 - a. Distribute interview questions via email one week prior to scheduled in-person interview.
 - b. Conduct recorded in-person interview with the assistant director of the organization.
 - c. Transcribe recorded interview within one week of completion.

- 4) Analyze interview results, identify strengths, weaknesses, opportunities, and threats.
- 5) Utilize results to develop a comprehensive curriculum including a training guide and resource manual for SUNY Cortland Outdoor Pursuits, incorporating key components:
 - a. Administrative Structure and Function
 - b. Human and Physical Resources
 - c. Programs and Participants
- 6) Review and finalize the curriculum with project committee and SUNY Cortland Outdoor Pursuits assistant director.



Role of the Project Agency

SUNY Cortland Outdoor Pursuits will be included in the process of developing and administering a needs assessment survey and program plan. Input from Outdoor Pursuits specific to their goals and future needs for the program, especially when considering the expansion of their current program, is being sought.

Needs Assessment Instrument

For the purposes of this project, the researcher conducted a needs assessment for SUNY Cortland Outdoor Pursuits Climbing Wall. This assessment helped to identify the services, training, and staffing required for employing adaptive methodology as well as gaps in the current programming. To this end, the needs assessment identified both strengths and weaknesses that will be used to help create the adaptive programming at SUNY Cortland's rock wall. The needs assessment and analysis helped to identify all parts of the program and create a baseline to work from when creating an adaptive rock climbing curriculum. This needs assessment instrument was co-developed by the investigator and the project committee. The needs assessment was conducted via scheduled in-person interview with open-ended questions best suited for assisting the organization in the development of an adaptive curriculum for rock climbing. The questions were divided into three categories: (1) Administrative Structure and Function, (2) Human and Physical Resources, and (3) Program and Participants.

SUNY Cortland Outdoor Pursuits was sent the needs assessment instrument one week prior to the scheduled phone interview to allow for review and gathering all the information necessary.

The steps for instrument completion were are follows:

- 1) Develop needs assessment survey, asking questions best suited for assisting the organization in the development of an adaptive curriculum for rock climbing.
 - a. Develop needs assessment interview
 - b. Review needs assessment survey
 - c. Revise needs assessment survey as needed.
- 2) Conduct needs assessment interview using the instrument.

CHAPTER FOUR

RESULTS

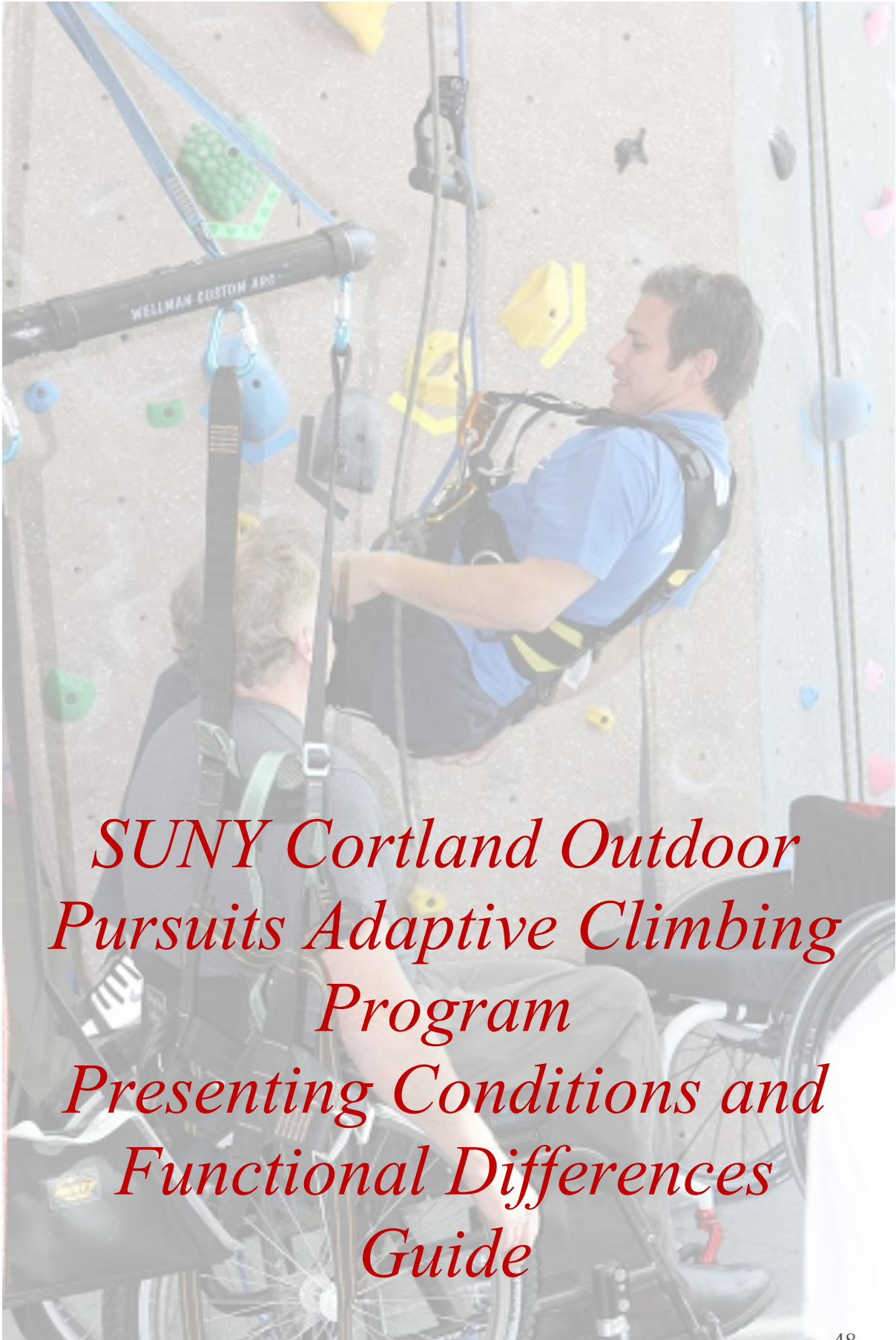
SUNY Cortland Outdoor Pursuits Adaptive Climbing Program: Presenting Conditions and Functional Differences Guide, Equipment and Adaptive System Overview, and Staff Training Guide

Introduction

During a recent needs assessment, SUNY Cortland Outdoor Pursuits identified a need for accurate and in-depth staff training manual related to offering adaptive programming. The creation of a comprehensive staff training guide and adaptive system overview is beneficial in ensuring the proper training and deployment of adaptive systems for participants. Staff training needs and the level of training each require will

differ according to the needs and differences of each participant and the system(s) employed. The three guides are provided in the following order: (1) Presenting Conditions and Functional Differences Guide, (2) Equipment and Adaptive System Overview, and (3) Staff Training Guide.

**The following pages include the SUNY Cortland
Outdoor Pursuits Presenting Conditions and Functional
Differences Guide**



*SUNY Cortland Outdoor
Pursuits Adaptive Climbing
Program
Presenting Conditions and
Functional Differences
Guide*

The following table includes an indexed guide to Presenting Conditions and Functional Differences

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Introduction

In climbing there are many functional differences that can affect participants' ability to participate. Moreover, many staff members are not aware of, or sensitive to, the range of functional differences participants may have that could impact their climbing experience. Accordingly, this section will review some of those functional differences and how they could potentially affect or change climbing for a participant. This portion of the comprehensive guide provides some background knowledge and information to assist staff members in providing responsible, respectful, and sensitive service to the participants they may meet while working at the climbing wall. This section includes (1) etiquette, (2) other health concerns, (3) amputations and limb differences, (4) paralysis,

(5) neurological disorders, (6) visual impairments, (7) hearing impairments, and (8) PTSD and TBI.

Etiquette

Using proper etiquette is very important when speaking to or interacting with individuals who have functional differences. Every individual and every difference will have its own set of norms and a sense of culture, there is no one right way or cookie-cutter answer for the facilitation of adaptive sports. This is also true for all the individuals that will be seen, there is no one size fits all protocol, treatment or diagnosis for any individual whether that is for individuals with functional differences or cognitive difference. For staff members, it is important to recognize and be able to mitigate using proper etiquette while providing services. Basic etiquette for any participant with a functional difference includes giving that person respect, using person-first language, building a sense of rapport, avoiding assumptions and asking appropriate questions when necessary, allowing and respecting personal space and boundaries, and speaking directly to them. One of the easiest ways to help facilitate adaptive climbing involves approaching your participants with questions about their goals, perceived strengths, and what they need to be successful during your first interactions. Then maintaining, a sense of irreverence and energy; as well as, inspiring them and being excited for them.

Other Health Concerns

There are other health concerns that can be associated with adaptive climbing. Ensuring that your participant is comfortable is important, this can be done by establishing a clear and comfortable line of communication between the staff and the

participant. When considering the potential for other health concerns, it is important that the staff member and the participant can use each other as resources. Knowledge and awareness of other health concerns in conjunction with staff and participants using each other as resources allows the staff member to ensure that the system is set up properly for each individual participant's needs, goals, and most importantly comfort to reduce the risk of injury or skin rashes. Open lines of communication and proper set up of equipment for each individual participant is especially important because many of these individuals attending an adaptive climbing program may also have secondary concerns relating to the activity's requirements, including skin health and abrasions, injuries from impact, injuries from overuse or misuse, injuries due to cold or heat, and the participant's mobility. Further, while some first-time participants may need extra attention when fitting gear to ensure proper fit without pressure points, other, more experienced participants may be able to tell you what they need when they arrive; ensuring that all these things are taken into consideration will minimize the confusion, frustration and potential for further injury from the equation. Individuals with functional differences are not only be subject to other physical health concerns, but also mental and emotional health concerns. As such, when providing services, it is important to mitigate these risks by working to ensure that the services provided are the highest quality in all possible areas.

Cognitive Differences

The majority of this manual is related specifically to those with functional differences. Individuals with cognitive differences all present differently, and there is not one clear way to interact with these individuals. It is important to note that staff members

will have to build a rapport with these individuals, use person-first language, ensure that they ask questions, follow the guidance of their participants, as well as participating in open communication. It is of great importance that these individuals feel comfortable and that their needs are met to the best of OP staff's ability. Individuals with cognitive differences can occasionally be challenging to work with, it is important to be patient, set clear boundaries, and to set protocols and use systems or techniques that will offer this specific individual participant to meet their wants, needs, and goals for their participation in the program using a person-first and person-centered approach.

Amputation and Limb Difference

There are a wide variety of differences and systems that will need to be rigged and used based on ability level. Amputations and limb differences can be congenital or from amputation via traumatic injury or disease (Paradox Sports, 2015). The length of an individual's residual limb, sometimes referred to as a stump, is important for adaptive climbing and the movements the participant can make. Some participants will choose to use their prosthesis, whereas others will sometimes choose to use their residual limb. It is important for staff to consider routes for individuals that have a limited potential for swinging or impact so that damage is not done to the prosthesis (Paradox Sports, 2015).

There are many different parts to a prosthesis, and it is important to understand what they mean and do. The prosthesis itself is an artificial body part used to replicate function (Paradox Sports, 2015). Prosthetics are heavy and may be sharp in areas or potentially pose the risk of falling off. Thus, it is important that participants and belayers wear helmets and keep the ground area under the participant clear (Paradox Sports,

2015). The various parts of the prosthesis and their functionality are further explained and broken down below in Table 1.

Table 1: Quick View: Prosthetics

Prosthesis Part	Prosthesis Function
Liner	Protective sleeve placed on the skin between the socket and the residual limb
Suspension	How the socket attaches to the residual limb. This can use a suction socket or a silicon suction liner, or it can also be self-suspended
Socket	The ergonomic part of the prosthesis that contacts the skin and is custom fit for each person. If this piece is poorly fitting it may be difficult to control the prosthesis or could cause skin irritation
Pylon	The metal pipe that gives the entire prosthesis structure and connects the socket to the terminal device
Terminal Device	Hand, foot or hooks

Lower leg amputations will require a climbing shoe to fit snugly on their prosthesis, sometimes it may be helpful to spin the foot 180 degrees backwards for increased stability (Paradox Sports, 2015). There are some systems that individuals can purchase that are made specifically for rock climbing but are often expensive. These individuals may sometimes utilize a sling attached to their prosthesis and their harness, so

they do not drop or lose it while climbing (Paradox Sports, 2015). Upper extremity amputations may use a figure eight or nine sling around their chest to help hold the prosthesis in place (Paradox Sports, 2015). Many of these climbers will opt to use their residual limb as it gives more feedback on the holds, in this case skin damage is important to be aware of. Often when a participant chooses to use their residual limb the participant will also use tape for protection. For first time climbers and new participants it is wise to coach them about the use of tape, as they may not yet know that it can be beneficial for their skin health.

Paralysis

The most common cause of paralysis is from spinal cord injury, the level and severity of the spinal cord injury will affect the level and severity of the paralysis and an individual's mobility and functionality.

Paralysis includes loss of motor function, either complete or partial, of specific body parts which can be caused by damage to the central nervous system or peripheral nervous system. It is important to note that no two injuries are the same, and that each individual, and each individual injury, will present differently. Thus, it is important for staff to understand the extent of the paralysis and its implications for rock climbing (Paradox Sports, 2015). For staff to gain a better understanding of the extent of an individual's paralysis it is important for them to be able to ask important questions to gain information about a participant's injury and assessment of their function, mobility, and limitations. These participants may require limited help from staff or extensive mechanical advantage systems along with increased staff assistance (Paradox Sports,

2015). In order for staff to perform an assessment staff should ask questions about function, mobility, and limitations.

Paralysis can occur from an injury to the cervical spine at the C4 vertebrae causing quadriplegia which is characterized by complete paralysis below the level of the neck (Paradox Sports, 2015). An injury at C6 could potentially cause partial paralysis of arms or hands and complete paralysis of the lower body (Paradox Sports, 2015). An injury to the thoracic spine at T6 could cause paraplegia characterized by paralysis below the level of the chest (Paradox Sports, 2015). Lastly, injury to the lumbar spine at L1 could cause paraplegia characterized by paralysis below the waist (Paradox Sports, 2015). Paralysis can also include hemiparesis or hemiplegia which is characterized by a complete or partial loss of motor function on one side of the body with varying limitations in an individual's mobility and ability (Paradox Sports, 2015). It is important to note that these are only potential outcomes and levels of functional differences, each individual injury may present differently in each individual causing varying levels of functionality, strength, and mobility. Each of these individuals who are wishing to participate will need to be individually assessed to ensure that the proper systems and mechanisms are being used for each individual.

When working with a participant who has paralysis it is important to ensure that they are comfortable, have no pressure points or pressure sores that could potentially lead to further infection or sepsis (Paradox Sports, 2015). Staff can check in on their participants by simply asking how the individual's skin is while climbing. These individuals may want to use extra padding to ensure that their body is cushioned and protected from abrasions. Many participants with paralysis will also require the use of

catheters, leg bags, or ostomy bags; these may become uncomfortable or cause problems when fitting a harness (Paradox Sports, 2015). It is also important to note that many of these individuals may experience clonus or spasticity and it is recommended that they wait for it to pass. However, if an individual exhibits Autonomic Dysreflexia, which is characterized by overstimulation of the autonomic nervous system, then 911 should be called immediately, as it is a medical emergency (Paradox Sports, 2015).

Neurological Disorders

This branch of functional differences encompasses one of the widest varieties or disorders with different impacts on any individual participant's daily life. As a staff member, it is important to speak to your participant about their specific condition gathering pertinent information on how it affects their daily life and things such as whether they have assistive devices like braces, their proprioception, balance, and mobility. Individuals with neurological conditions may also experience flare-ups or have specific triggers and it is important to understand protocols or ways to assist them.

Diseases of the brain, spinal cord and nerves can cause neurological disorders. Many individuals with neurological disorders may be stable or unchanging or their condition may be progressive and worsening (Paradox Sports, 2015). These individuals may have mobility or strength limitations in one or more limbs, problems with balance, coordination or sensation (Paradox Sports, 2015). An initial assessment of each individual participant's abilities will help guide and facilitate the best techniques or tools. Individuals with neurological conditions may require frequent rest breaks if/when flare-ups in symptoms occur. If an individual's neurological conditions affect their speech, it

is also important to work out a means of communication either via spoken cues, hand signals and gestures, or through rope tugs and vibrations (Paradox Sports, 2015).

Visual Impairment

An individual participant's degree of visual impairment will determine the amount of assistance and adaptive considerations needed while climbing. The participant will benefit from visiting the area prior to climbing for them to become comfortable. It may also be useful to utilize verbal cues and/or slide climbing with these individuals.

Visual impairments include individuals with color blindness, loss of peripheral vision, loss of central vision, loss of depth perception, and those who are legally blind, an individual with less than 20/200 vision with correction (Paradox Sports, 2015).

Individuals with visual impairments require clear communication. These individuals may also need the area or the climbing surface to be described to them (Paradox Sports, 2015).

Individuals with visual impairments will need only one staff member giving directions while climbing, it may also be necessary to use the participants name if the location is busy to decrease confusion (Paradox Sports, 2015). To establish a means of communication and help the participant, it is important to speak with them prior to climbing to establish a mutually agreed upon line or mode of communication that will work the best for both parties.

Deaf or Hard of Hearing

Participants who have a hearing impairment will likely need very few and minimal adaptations for rock climbing. The major concern is establishing a clear and concise system of communication between the belayer and the climber (participant). This

may include hand gestures, lip reading, or using vibrations through the rope in signals to convey messages.

When working with an individual who has a hearing impairment, it is important that the staff member does not assume the individual can read lips, the staff member should also not yell or raise their voice or assume that the individual has residual hearing (Paradox Sports, 2015). A staff member who is bilingual in American Sign Language and English could be helpful in administering programming, however not all individuals who are Deaf or Hard of Hearing use American Sign Language, however the staff member and the participant can also communicate through other hand signals, or written communication, it is also important to note that when trying to communicate they should stand in well-lit places with few distractions, speaking slowly, facing the participant, not wearing hats, and/or be chewing gum. There may also be a need for an ASL interpreter or a bilingual friend/family member to join them to assist in proper communication.

When trying to communicate the participant and the staff member can use body language and gestures. Prior to climbing the staff and the participant could also go over the Marhold Tug (Paradox Sports). The Marhold Tug is not very widely spread but uses the rope itself or a thin static rope for communication (Paradox Sports, 2015). When using the Marhold Tug, one tug signals for slack, two tugs signals for tension, three tugs signals on belay or off belay, and four tugs signals to ask how much rope is left which is then returned by a number of tugs corresponding to the amount of feet of rope left, this is specific to lead climbing not top roping (Paradox Sports, 2015).

Quick View Table: Marhold Tugs

Marhold Tugs	
One Tug	Slack
Two Tugs	Tension
Three Tugs	On belay/off belay
Four Tugs	Only used for lead climbing. Used to signal how many feet of rope are left which is then returned by a number of tugs directly corresponding to the number of feet of rope remaining.

Post-Traumatic Stress Disorder (PTSD)

PTSD is typically considered an invisible disorder, as there are usually no physical characteristics that affect the individual. However, this is not always the case. Some individuals may experience other concomitant conditions, which could add to the level of need for each individual participant or create differences in the adaptive systems required for use.

PTSD may present differently in each individual and be triggered by different things or be a constant presence (Paradox Sports, 2015). PTSD is often characterized by traumatic flashbacks, hyperarousal, self-destructive behavior, memory problems, difficulty with relationships or activities that once brought that individual a sense of pleasure (Paradox Sports, 2015).

When working with participants who have PTSD it is important to learn about their conditions by direct communication or personal history forms. Things you would want to know are the conditions history, how it affects the participant and what assistance they think they might need to pursue their goals. It is also important to keep in mind that

staff members should be patient and attentive with participants to notice changes and provide assistance when needed. When working with individuals with PTSD, staff members should also utilize step-by-step hands-on instruction (Paradox Sports, 2015).

Traumatic Brain Injury (TBI)

Similar to PTSD, TBIs can also be invisible, as there may not be any major physical characteristics that affect the individual, however these individuals may also be impacted by other concomitant conditions. These concomitant conditions or other comorbidities can add to the level of need or differences in the adaptive systems required for use.

TBI is often caused by blows, jolts or penetrating wounds to the skull, these injuries interrupt or disrupt normal brain activity and functioning (Paradox Sports, 2015). TBI may range in severity from a mild concussion to amnesia to long term coma, with these varying severities there may also be differing long-term issues such as loss of attention, memory loss, decreased motor function, lack of balance, trouble hearing, trouble with vision, and other senses (Paradox Sports, 2015).

When working with participants with TBI it is important to learn about their conditions. The staff member can learn about their condition through direct communication or personal history forms. The pertinent information for these conditions is its history, how it affects the participant and what assistance they think they might need to pursue their goals. It is also important to keep in mind that staff members should be patient and attentive with participants to notice changes and help when needed. When working with individuals with TBI, staff members should also utilize step-by-step hands-

on instruction, simplification of information delivered and repetition for increased clarity
(Paradox Sports, 2015).

**The following pages include the SUNY Cortland
Outdoor Pursuits Adaptive Equipment Overview**



*SUNY Cortland Outdoor
Pursuits Adaptive Climbing
Program
Adaptive Equipment
Overview*

Part 1: Recommended Equipment for Adaptive Climbing

The following table includes an indexed guide to Recommended Equipment for Adaptive Climbing

Recommended Equipment for Adaptive Climbing		
Equipment	Recommendation	Page Number
Progressive Capture Belay Device	Petzl GriGri	65
Carabiner with Braking Spur	Petzl Freino	65
Semi-Circular Carabiner	Petzl Omni	67
Oval Locking Carabiner	Petzl OK	68
Steel Triangle Maillon	Petzl Delta	68
Progressive Capture Double Pulley	Petzl Jag Traxion	68
Seated Harness	Misty Mountain Easy Seat Misty Mountain ARC Harness	68
Swivel	Petzl Swivel	69
Handlebar Ascender	Wellman Pull-up Bar	69
Ascender	Petzl Ascension Petzl Croll	70
Active Hands	Active Hands General Purpose Gripping Aid	71
Rigging Plate/Bear Claw	Petzl Paw	72
Super Eight Knot	The super eight knot, as opposed to the eight knot or an eight knot on a bight should be used in adaptive climbing because of the strength of the knot when dressed as well as its double-backed properties	73
Double Pulley	Petzl Gemini Petzl Jag	74
Single Pulley	Petzl Fixe	75
Progressive Capture Single Pulley	Petzl Pro Traxion Petzl Micro Traxion	76
Static Rope	Recommended that the rope is at least double the height of the wall for a 1:1 system, three times the height of the wall for a 2:1 system, etc.	

Recommended Equipment for Adaptive Climbing

Introduction

In the following section different types of equipment will be outlined and explained to assist in proper use and set up of adaptive systems. Much of the adaptive climbing equipment is made by the company Petzl, although you can find alternatives or other similar pieces of equipment made by other companies. Petzl equipment seems to be the industry standard for much of the adaptive climbing world.

Petzl GriGri

The Petzl GriGri is an assisted braking device that is useful for power belays, releasable fixed lines, belaying a participant who is heavier than you, and providing an extra layer or protection for the participant and belayer. This piece of equipment can be viewed in image 1.

Petzl Freino

Recommended for use with a GriGri, the Petzl Freino is a locking carabiner with a braking spur to thread the rope through. This spur adds extra friction and control for lowering or descending. This piece of equipment can also be viewed in image 1.



Image 1 – Petzl GriGri and Petzl Freino Carabiner

Semi-circular Carabiner

Recommended is the Petzl Omni (Paradox Sports, 2015). The semi-circular carabiner is a multi-directional semi-circular carabiner that is useful when connecting a participant's chest harness to devices, or wherever a triaxial load is expected. This piece of equipment can be viewed in image 2.



Image 2 – Semicircular Carabiner

Oval Locking Carabiner

Recommended is the Petzl OK (Paradox Sports, 2015). The oval locking carabiner piece of equipment is useful when connecting pulleys to other components within the system.

Steel Triangle Maillon

Paradox Sports recommends the Petzl Delta (2015). The steel triangle maillon is used mainly in connecting the seat attachment of a seated harness to a chest harness connection point.

Progressive Capture Double Pulley

A double pulley, two sheaves, that also includes a camming mechanism to allow for progressive capture. This is of great importance when building mechanical advantage systems. Paradox Sports recommends the Petzl Jag Traxion (2015).

Misty Mountain Easy Seat

The Misty Mountain easy seat is a seated harness specific for adaptive climbing. This seat harness has a padded seat, chest harness and back support. This harness is commonly used but offers less support than the Misty Mountain ARC Harness.

Misty Mountain ARC Harness

The Misty Mountain ARC harness is a seated harness allows for more support, including full back support and thick padding. This harness is sturdier and allows for individuals to have increased stability while climbing.

Swivel

The swivel is used mostly for hauling or mechanical advantage systems. Paradox Sports recommends the Petzl Swivel (2015). This piece of equipment will prevent the rope from twisting even if the load, gear or a participant, is turning.

Handlebar Ascender

The handlebar ascender can be created by threaded rod inserted into the lower attachment hole of the Petzl handle ascender. This helps to accommodate participants by using a handlebar for a better adaptive grip, and active hands if necessary. This piece of equipment can be viewed in image 3.



Image 3 – Handlebar Ascender

Ascender

An ascender is also sometimes referred to as a rope clamp. This is useful when climbing or pulling on ropes specifically for progression or progressive capture. The handle ascender has a right and left hand orientation, this is important to note based on a participant's dominant side use. The handle ascender, found in image four, is used by a participant raising their arm above their head and pulling down on the ascender to assist them in moving up the rope. The Croll ascender, found in image five, is used to attach the participant to their chest and seated harness. These pieces of equipment can be viewed in images 4 and 5.



Image 4 – Handle Ascender (with locking carabiner)



Image 5 – Croll Ascender

Active Hands

Used for individuals with limited hand strength or dexterity. Active hands are a glove with a grip assist allowing them to be wrapped around a handlebar ascender with Velcro, so the participant does not lose their hand placement. Paradox Sports recommend using the Active Hands brand general purpose gripping aid (2015).

Rigging Plate/Bear Claw

This is a piece of equipment that is used to help organize the carabiners and sections of rope when rigging an adaptive system. The rigging plate/bear claw can come in all different shapes and sizes. Paradox Sports recommends using the Petzl Paw (2015). This piece of equipment can be viewed in image 6.



Image 6 – Rigging Plate/Bear Claw

Super Eight Knot

This knot is used often in adaptive climbing and in building anchors for climbing outdoors. This knot has more redundancy and is stronger than other knots and is therefore a standard knot used for rigging adaptive systems. This can be viewed in images 7 and 8.

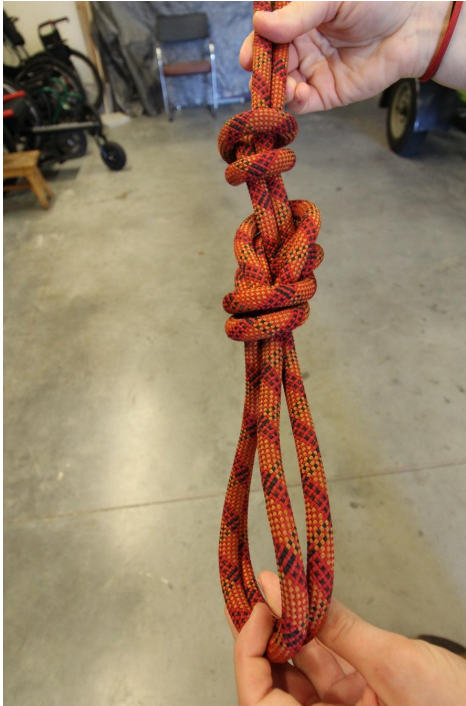


Image 7 – Super Eight Knot



Image 8 – Super Eight Knot

Double Pulley

The double pulley has two separate sheaves that the rope can run through.

Paradox Sports recommends the Petzl Gemini (2015). This piece of equipment can be viewed in image 9.



Image 9 – Double Pulley

Single Pulley

The single pulley is a pulley with only one sheave, this is useful for building mechanical advantage systems. Paradox Sports recommends using the Petzl Fixe (2015). This piece of equipment can be viewed in image 10.



Image 10 – Single Pulley

Progressive Capture Single Pulley

A progressive capture single pulley includes one sheaf, like other single pulleys, however this device also includes a camming mechanism to allow for progressive capture. This is of great importance when building mechanical advantage systems. This equipment can be viewed in images 11 and 12.



Image 11 – Micro Traxion (Progressive Capture Single Pulley)



Image 12 – Pro Traxion (Progressive Capture Single Pulley)

Part 2: Adaptive Climbing Systems

The following table includes an indexed guide to the Adaptive Climbing Systems

Adaptive Climbing Systems Index

System	Equipment Needed	Belayers/ Volunteers Needed	Page Number
Giving Beta	None. This is simply giving advice, helping guide participants through the moves or providing encouragement.	1	80
Side Climbing	None. This allows someone to climb next to the participant and help them find a hold, grip a hold or provide encouragements along the way.	1-2	80
Campusing	None. Is the technique used in many of these adaptive systems, it requires a great deal of upper body strength for the participant to do repeated pull-ups to progress up the wall.	1	81
Power Belaying or Assisted Belaying	Required: Grigri or other assisted braking device	1	81

Recommended: depending on size of the participant one could use a sandbag or a pulley to help.

1:1 (Basic Ascending)	Two locking carabiners, Croll ascender, chest harness, sit harness, and handlebar ascender.	1	86
1:1 Redirect	Two locking carabiners, motion-capture pulley, rope that is at least double the height of the wall, and handlebar ascender.	2	88
2:1	Three locking carabiners, single pulley, progressive capture pulley, and an ascender.	2	91
3:1	Three locking carabiners, double pulley, progressive capture pulley, ascender, and rope four times the height of the wall.	2	93
4:1	Five locking carabiners, double pulley, single pulley, motion-capture pulley, rope that is five times the height of the wall, and an ascender.	2-3	96
5:1	Six locking carabiners, two double pulleys, motion-capture pulley, rope six times the height of the wall, and an ascender.	2-3	99

Adaptive Systems

Introduction

A brief outline of each possible adaptive system and the equipment necessary to build the system is included in this section. It is a good reminder for anyone who may be employing these systems in the future to set them up while on the ground and with the pulleys laid out only about one to two feet from each other, and then hauling the system into place. Included in this section there is also a comprehensive table that includes a thorough but watered-down display of the different systems that can be used in adaptive climbing. This table also includes the equipment required to build each individual system, where appropriate, or gives a brief description about what the adaptive modality being employed is. This table also includes the number of belayers, or staff needed to employ the use of each system safely. Lastly, the table also includes page numbers where these systems can be located throughout this manual and on which more information about each individual system can be found.

Giving Beta

Giving beta in an adaptive setting is more like a coaching process. Giving the participant beta will allow for the belayer to tell the participant the upcoming movement, body placement, or next hand/foot hold(s) necessary to continue making their way up the wall.

Side Climbing

Side climbing can be a very useful adaptive technique which often allows for a facilitator, friend, or relative to climb alongside a participant (Paradox Sports, 2015). Side

climbing is useful because the participant now has direct support, and an individual up there with them who can provide feedback, encouragement and physical assistance if needed (Paradox Sports, 2015). To successfully employ this technique, the participant would be on one anchor, while there were one or two other people climbing on anchors directly next to them, the side climber(s) would stay at the same level or lower than that of the participant. Side climber(s) are useful in assisting the climber if they require any extra assistance making their way up the wall. For more information and diagrams on side-climbing please refer to the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Campus

Campus refers to a specific type of climbing in which participants use only their upper body to progress up the wall. When a participant campuses, they are just using their hands and arms, not their feet or lower body. When using this technique, a power belay is often needed, and slightly overhanging walls or steeper walls are useful. When campusing, there is occasionally a need for increased protection for the participant such as using knee pads and a full body harness.

Power Belay

Power belay refers to an assisted belaying technique that typically relies on the belayer to use their body weight and or a sandbag to help assist a participant up the wall. The belayer will keep constant tension on the rope. This method should only be used with an assisted braking device, and belayers might also need or want to use an ascender to help with their power belay.

Mechanical Advantage Systems Outline

Mechanical Advantage equipment is used in rigging complex systems, or systems that will enable participants with functional differences greater benefits while climbing (Paradox Sports, 2015). Diagrams of these mechanical advantage systems can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

A system with less mechanical advantage will require less equipment than a system with more mechanical advantage (Paradox Sports, 2015). There is some evidence to suggest that a ground anchor or an anchor off t-nuts on the wall is a sturdy and solid way to build an anchor for adaptive climbing as it will not ever be force loaded (Paradox Sports, 2015). This decision to build and use t-nuts for a backup belayer will be up for the individual gym's interpretation. Included in this section is the 5:1 system, this system is the most complex and provides the most mechanical advantage to the participant, there are almost no uses for this system in a gym setting, but this system has been added for knowledge and clarity.

When thinking about mechanical advantage systems 2:1 to 5:1 systems are better for shorter climbs, less than 50 foot tall, because of the amount of rope needed (Paradox Sports, 2015). These systems will also work well, or better, on slightly overhanging walls where there is less friction and less of a chance for participants to "cheese-grate" against the wall (Paradox Sports, 2015). This allows the user to experience a more authentic and pleasurable rock climbing experience. Regarding safety, it is important to use both the master top rope and a backup belay top rope for all participants in a gym setting (Paradox Sports, 2015).

Lastly, it is also important to note that when rigging a mechanical advantage system there will need to be one belayer on the mechanical advantage system as well as another belayer on back-up belay. A third volunteer could be needed unless the individual is using the Croll ascender, however having another volunteer can still be helpful in case the rope does not quite slide through the Croll ascender right or anything else arises.

Before Rigging the Adaptive System

To rig and create each of these systems, the staff will require the use of the proper gear, outlined in the chart below. One end of the rope will be tied to the participant or the top anchor; this location depends greatly on what system is being used (Paradox Sports, 2015). It is also important while rigging these systems that the rope is pulled through the pulley or pulleys in a circular fashion with the rope set-up being consistent in each pulley (Paradox Sports, 2015).

Now that the staff member has picked a system that will work the best for a participant and has also set up this system it is now time to begin preparing the participant for the climb. The participant should also be tied into a back-up belay, this is a separate and independent top rope system used as a backup to the hauling system that the participant is climbing on. The participant should also have their ascender hooked into the rope at this point before the staff takes one final inspection of all the equipment, carabiners locked, knots tied properly, pulleys loaded correctly, and cams engaged (Paradox Sports, 2015).

After Rigging the Adaptive System

Once the system has been set up, it is important to ensure that motion capture pulleys cams are unlocked and that ascenders are off the rope so that it can be hauled into place to expand the system, this is not applicable for 1:1 redirect or 5:1 systems where the motion capture pulley will be at the top of the wall (Paradox Sports, 2015). Once the system has been expanded, the master top rope should be lowered back to the ground and the cams should be relocked and then hauled back to the top of the wall (Paradox Sports, 2015). The ground end of the system must now be threaded correctly through a GriGri or other assisted braking device that is clipped to an anchor (the floor or the base of the wall using full-strength and redundant anchors) ensuring that there is enough rope on the ground for the climber to later be lowered back down (Paradox Sports, 2015). The staff member should keep in mind that when rigging a 1:1 redirect, 3:1, or 5:1 system that the participant will be tied into the rope directly to their harness or the masterpoint of their adaptive climbing seat, and when rigging a 2:1 or 4:1 system the end of the rope is typically anchored into the top anchor with the bottom pulley connected to the harness or adaptive climbing seat (Paradox Sports, 2015).

As the participant begins climbing, the staff member should hold tension on the end of the haul rope below the level of the participant's ascender to allow the participant to begin climbing (Paradox Sports, 2015). As the participant gets a few feet off the ground, it is important that the comfort and safety of the harness be checked and, if needed, the participant lowered back to the ground to readjust (Paradox Sports, 2015). Once the participant has reached the top they will need to communicate with their belayer to begin to lower them back to the ground, from both the master top rope and the backup

belay and then begin derigging and resetting the system as needed (Paradox Sports, 2015).

1:1 Mechanical Advantage System (Basic Ascending)

A 1:1 system for basic ascending will provide no mechanical advantage to the climber (Paradox Sports, 2015). Accordingly, full upper body strength is required for this technique as this system is like repeatedly doing pull-ups to travel the height of the wall. Required equipment and set up is shown in the Quick View table below. A picture of the set-up system can be viewed at the end of the section below the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 2: Quick View: 1:1 System (Basic Ascending)

Physical Requirements	Full upper body strength required
Equipment Required	2 locking carabiners; 1 Sit harness; Croll ascender; 1 Chest harness; Static rope that is double the height of the wall; and a handlebar ascender.
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Clip the Croll Ascender between the sit harness and chest harness 3. Make sure make sure the handlebar ascender is placed above the climber 4. Set up the climber on both the master top rope and the back-up belay with a second back-up top rope 5. Complete a Side to Side System Check on the system, and start climbing



Image 13 - 1:1 Basic Ascending (NOT a Mechanical Advantage System)

1:1 Redirect Mechanical Advantage System

When using a 1:1 redirect system for a fast, smooth and low friction ascension this system will provide some minimal mechanical advantage for those who are using the system (Paradox Sports, 2015). Required equipment and set up is shown below in the Quick View table. A picture of the set-up system can be viewed at the end of the section below the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 3: Quick View: 1:1 Redirect Mechanical Advantage System

Physical Requirements	Full upper body strength required
Equipment Required	2 locking carabiners; 1 motion capture pulley; 1 Sit harness; 1 Chest harness; Static rope that is double the height of the wall; and a second ascender, preferably handlebar.
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Run the rope through the motion capture pulley then back down to the participant 3. Haul the system into place 4. Make sure the handlebar ascender is placed above the climber 5. Set up the climber on both the master top rope the back-up belay with a second back-up top rope 6. Complete a Side-to-Side System Check on the system, and start climbing

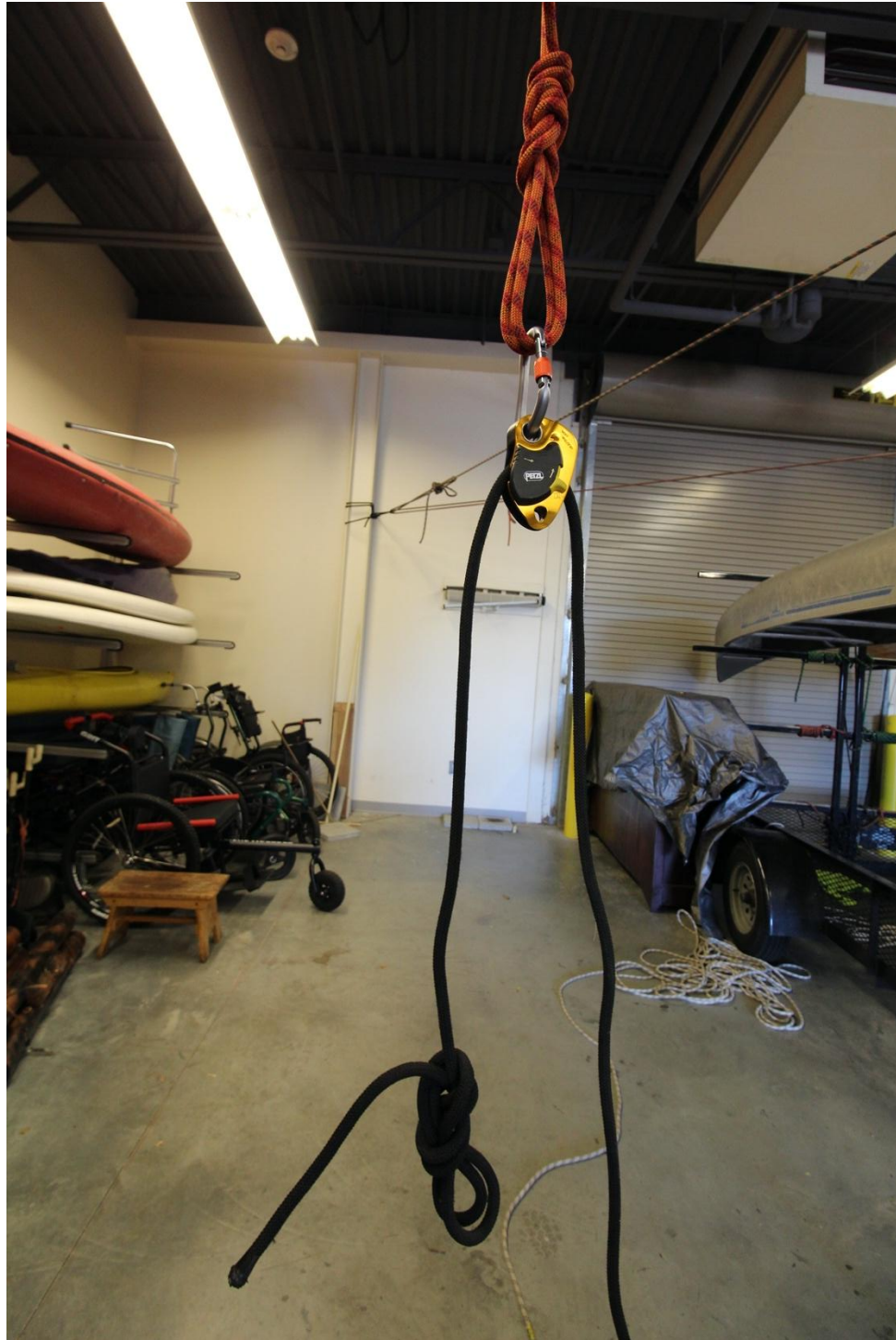


Image 14 - 1:1 Redirect (Mechanical Advantage System)

1:1 Treadmill Mechanical Advantage System

There is also an alternate and advanced technique that can be used. This allows for participants to get more climbing and training done in a shorter distance. When rigging this system, the staff member will rig the system very similarly to that of a 1:1 system. It is like a slingshot, one end on the ground and the other end used to tie in, with a backup belayer. Required equipment and set up is shown below in the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 4: Quick View: 1:1 Treadmill Mechanical Advantage System

Physical Requirements	Full upper body strength required
Equipment Required	2 locking carabiners; 1 Croll ascender; 1 Sit harness; 1 Chest harness; Static rope that is six times the height of the wall; and a second ascender, preferably handlebar.
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Run the rope through the Croll pulley then back down to the participant through the handlebar ascender 3. Set up the climber on both the master top rope the back-up belay with a second back-up top rope 4. Complete a Side-to-Side System Check on the system, and start climbing 5. As the participant begins climbing the primary belayer will slowly begin releasing tension on the rope which will lower the climber, this will cause an equilibrium where the participant is ascending in space

2:1 Mechanical Advantage System

A 2:1 system is typically used to provide easy and significant mechanical advantage to the participant (Paradox Sports, 2015). When using this system, the participant needs to be able to lift at least half their body weight (Paradox Sports, 2015). A picture of the set-up system can be viewed at the end of this section below the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 5: Quick View: 2:1 Mechanical Advantage System

Physical Requirements	Ability to lift at least half of their body weight
Equipment Required	<p>3 locking carabiners;</p> <p>1 single pulley;</p> <p>1 progressive capture pulley;</p> <p>Static rope that is three times the height of the wall;</p> <p>1 Sit harness;</p> <p>1 Chest harness;</p> <p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope secured using a super eight knot on a bight on one end of the rope 2. Use one locking carabiner to secure the progressive capture pulley to the participant's harness

	<ol style="list-style-type: none">3. Run the rope down through the motion capture pulley then back up through the single pulley and back down to the participant4. Haul the system into place5. Make sure make sure the handlebar ascender is placed above the climber6. Set up the climber on both the master top rope the back-up belay with a second back-up top rope7. Complete a Side-to-Side System Check on the system, and start climbing
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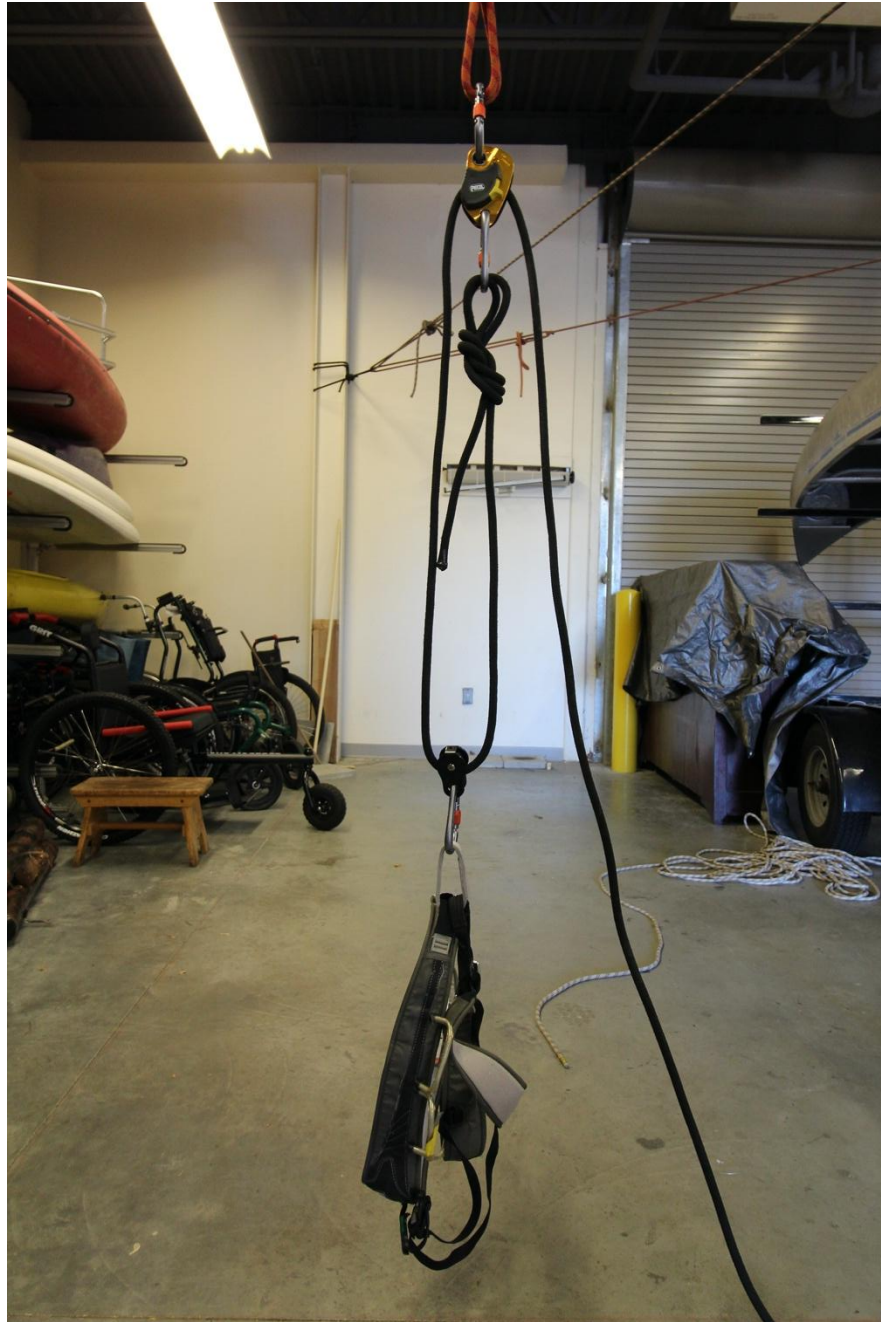


Image 15 - 2:1 Mechanical Advantage System

3:1 Mechanical Advantage System

A 3:1 system is the most diversely used system to set up for participants. For a participant to be able to use a 3:1 system they must be able to pull at least one third of

their body weight (Paradox Sports, 2015). Required equipment and set up can be found in the Quick View table below. A picture of the set-up system can be viewed at the end of this section below the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 6: Quick View: 3:1 Mechanical Advantage System

Physical Requirements	Ability to lift at least one third of their body weight
Equipment Required	<p>3 locking carabiners;</p> <p>1 progressive capture pulley;</p> <p>1 double pulley;</p> <p>Static rope that is at least four times the height of the wall;</p> <p>1 Sit harness;</p> <p>1 Chest harness;</p> <p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Run the rope through one sheave of the dual pulley then back down to the participant 3. Next run the strand of rope up through the progressive capture pulley that is clipped into the participants harness using one locking carabiner 4. Next, the rope will be run back up through the other sheave of the dual pulley and lastly back down to the participant 5. Haul the system into place 6. Make sure make sure the handlebar ascender is placed above the climber 7. Set up the climber on both the master top rope the back-up belay with a second back-up top rope

8. Complete a Side-to-Side System Check on the system, and start climbing

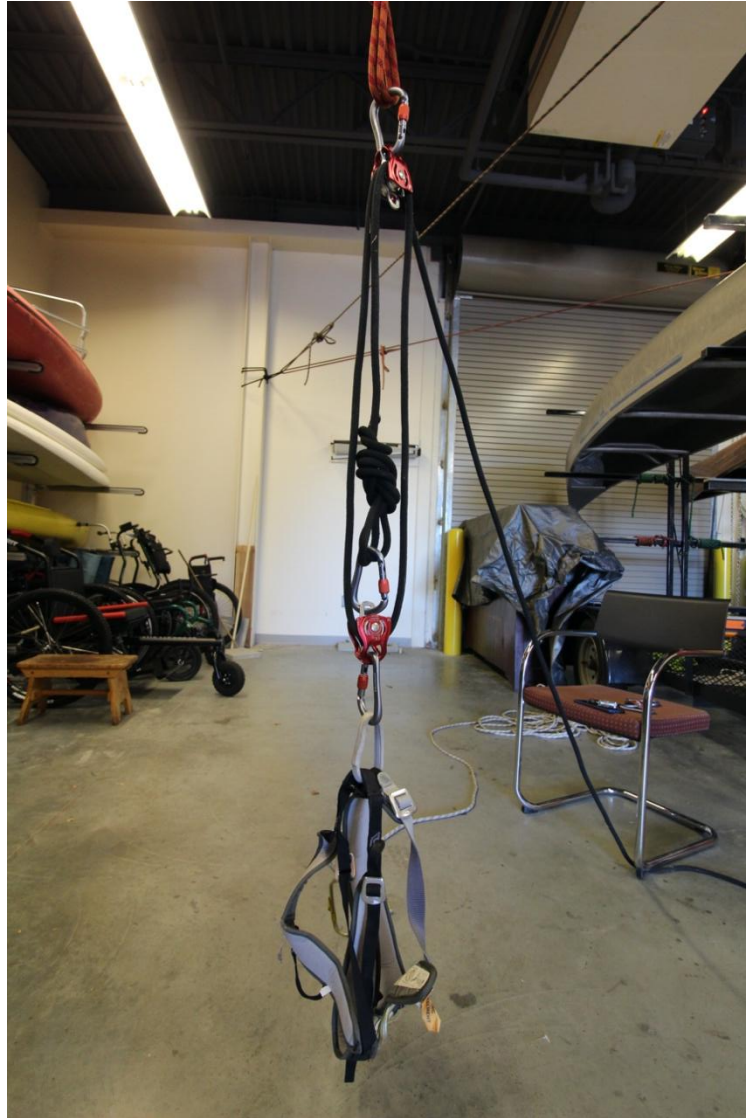


Image 16 - 3:1 Mechanical Advantage System

4:1 Mechanical Advantage System

When using a 4:1 system this will offer participants more mechanical advantage for more limited strength and mobility (Paradox Sports, 2015). Information on the setup of this system and the equipment required can be found in the Quick View table below. A picture of the set-up system can be viewed at the end of this section below the Quick View table. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 7: Quick View: 4:1 Mechanical Advantage System

Physical Requirements	Used for climbers with greater restrictions on mobility and limited strength
Equipment Required	5 locking carabiners; 1 motion capture pulley; 1 double pulley; 1 single pulley Static rope that is at least five times the height of the wall; 1 Sit harness; 1 Chest harness; 1 rigging plate; and an ascender, preferably handlebar.
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope using a super eight knot on a bight for the top rope clipped into a rigging plate 2. Run the rope up through the single pulley on the participants harness (clipped in using a carabiner) and one sheave of the dual pulley then back down to the participant

	<ol style="list-style-type: none">3. Next run the strand of rope up through the motion capture pulley that is clipped into the participants harness using one locking carabiner4. Next, the rope will be run back up through the other sheave of the dual pulley and lastly back down to the participant5. Haul the system into place6. Make sure make sure the handlebar ascender is placed above the climber7. Set up the climber on both the master top rope the back-up belay with a second back-up top rope8. Complete a Side-to-Side System Check on the system, and start climbing
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Image 17 - 4:1 Mechanical Advantage System

5:1 Mechanical Advantage System

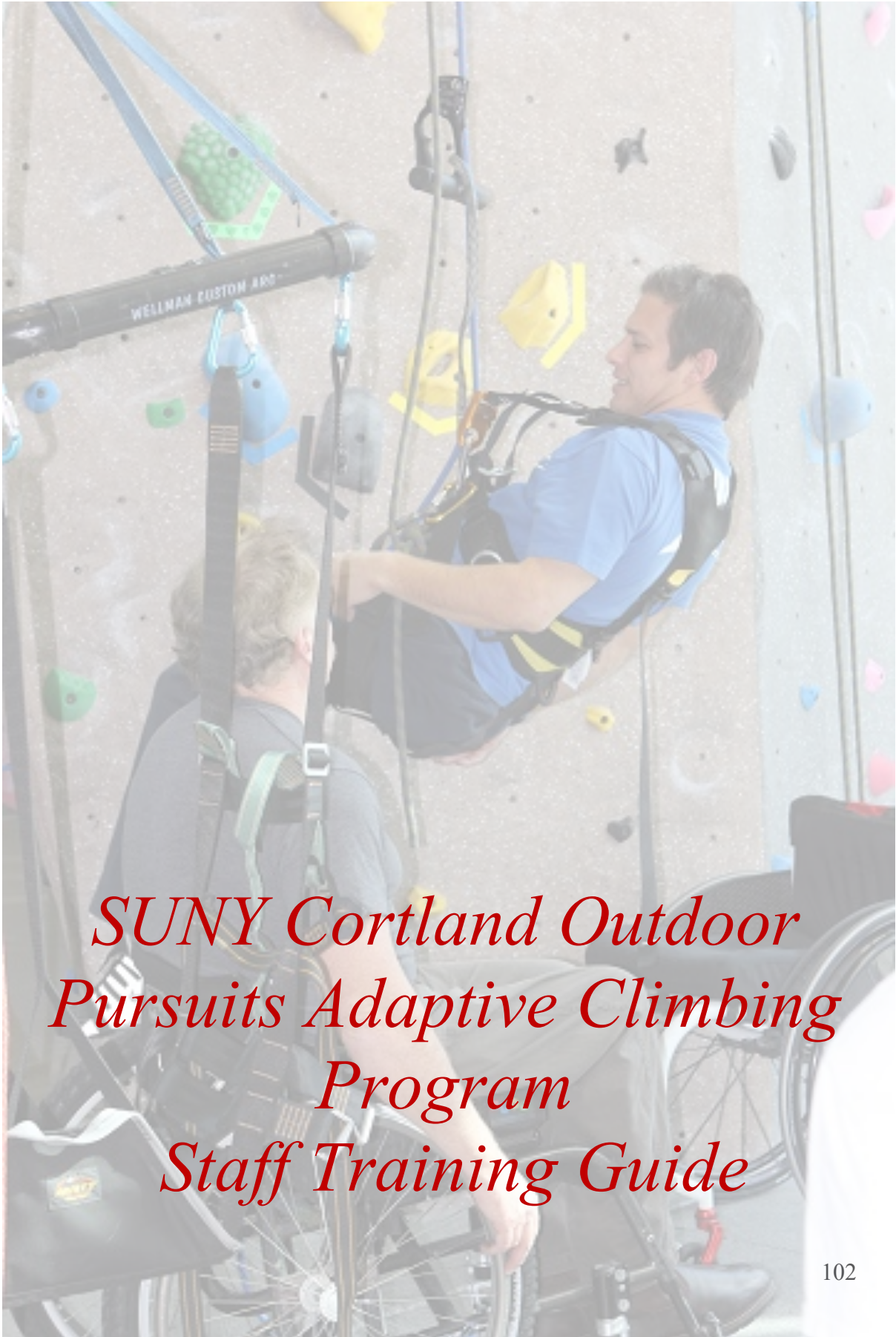
The most complex of the mechanical advantage systems is the 5:1 system, this system requires the most equipment and gives the participant the greatest amount of mechanical advantage (Paradox Sports, 2015). This system is the greatest amount of mechanical advantage that can be applied without diminishing returns (Paradox Sports, 2015). A 5:1 system can be used for those who are very heavy, who are elderly or have the least amount of strength or mobility (Paradox Sports, 2015). This system has been included in this manual mostly for viewing purposes, there are almost no situations in which this system will need to be rigged to be used in a gym setting. Below in the Quick View table is the required equipment and setup of the system. Additional diagrams of this mechanical advantage system can also be found within the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook.

Table 8: Quick View: 5:1 Mechanical Advantage System

Physical Requirements	Used for climbers with greater restrictions on mobility and limited strength
Equipment Required	6 locking carabiners; 1 progressive capture pulley; 2 double pulleys; 1 single pulley Static rope that is at least six times the height of the wall; 1 Sit harness; 1 Chest harness;

	<p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope using a super eight knot on a bight for the top rope clipped into a rigging plate 2. Begin with the progressive capture and one dual pulley clipped into the rigging plate, and a dual pulley clipped into the participant's harness 3. Tie an eight knot into the participants harness, then run the rope up through one sheave of the dual pulley on the participants harness continuing up through one sheave of the double pulley at the anchor before running the rope back down to the participant 4. Next run the strand of rope back up through the other sheave of the double pulley that is clipped into the participants harness, and up through the other sheave of the double pulley at the anchor 5. Next, the rope will be run back down through the progressive capture pulley lastly back down to the participant 6. Haul the system into place 7. Make sure make sure the handlebar ascender is placed above the climber 8. Set up the climber on both the master top rope the back-up belay with a second back-up top rope 9. Complete a Side-to-Side System Check on the system, and start climbing

**The following pages include the SUNY Cortland
Outdoor Pursuits Adaptive Climbing Program Staff
Training Guide**



*SUNY Cortland Outdoor
Pursuits Adaptive Climbing
Program
Staff Training Guide*

The following table includes an indexed guide to Staff Training

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Introduction to Adaptive Climbing

Staff should keep in mind that adaptive climbing is an innovative, flexible way to allow individuals with functional differences to create and attain goals pertaining to rock climbing. Climbing in a gym is an easy first step in adaptive climbing because it provides a consistent and controlled environment (Paradox Sports, 2015). In this section there will be sample training guides for specific portions of the climbing walls' day-to-day

operations, such as the facility orientation, belay clinic and most importantly a breakdown of mechanical advantage systems training as a gross overview and broken down into small individual sections.

Adaptive climbing is used when an individual has diminished upper body strength, for individuals who have functional differences, or for anyone interested in learning and using the techniques and systems. Adaptive climbing at SUNY Cortland should be following a universal design that allows for participation. This type of climbing allows individuals to participate in climbing techniques that have been changed and adapted to better suit each individual and their needs, as well as achieve similar outcomes, and be a part of the climbing community. In the following sections staff training will be split into phases to help break down information and ensure that it is being built upon.

Staff Training Phase One

This phase of the training includes the introductory sections: etiquette and assessment. These two things are just as important as the set up and proper use of the mechanical advantage systems because these parts also help staff members and participants to develop a working relationship.

Etiquette

Adaptive climbing participants are in-tune with their bodies and this may lead to a role reversal between participant and staff member for the proper conveyance of important information on the participant's mobility, functionality and goals. Staff members should be able to build rapport with their participants, including being able to speak to them about their differences, needs, and goals. In order for staff members to build rapport and gain an understanding of their participants the staff will need to give an assessment in which they will ask pertinent questions to gain information about the participants wants and needs. Staff should be able to ask questions pertaining to what may be important for staff to know while climbing, anything about their condition, and the quality of their skin (Paradox Sports, 2015). Staff members and participants should work together to set realistic goals for climbing and both work together towards those goals. Staff members should also feel comfortable working with individuals with functional differences in a person centered and strength-based manner that focuses on empowering the individual to meet personal goals and overcome situational challenges. This collaborative approach should primarily see staff providing assistance where required for safety and educational purposes (Paradox Sports, 2015). Lastly, it is also important for staff and participants to be able to transcend climbing to enjoy greater

therapeutic outcomes that enhance physical, cognitive, social, and spiritual well-being as well as a greater experience (Paradox Sports, 2015).

Assessment

This form serves as the foundational information in which staff can use to begin a conversation aimed at ensuring the participant receives benefits for their wants, needs, goals, and being a part of the greater climbing community. An assessment or intake form is an important document for staff members to be able to understand their participants wants, needs, and goals for adaptive and inclusive rock climbing more specifically. In attempts to ensure that the participants are perceiving benefits and are making strides towards their goals of participation.

This assessment should include an individual's contact information, emergency contact information, their specific functional difference, mobility assistive devices used, allergies, height and weight, and how the individual heard about the program. A sample participant assessment/intake form can be found below, although this exact form does not need to be used it is recommended that SUNY Cortland Outdoor Pursuits begin developing and modifying an Essential Eligibility Criteria (EEC) document that includes adaptive climbing.

Participant Intake Form

Date: _____

Please Print Clearly

Contact Information:

First Name	Last Name	#C00
Home Phone		Mobile Phone
Email(s)		

Emergency Contact Information:

First Name	Last Name	Relationship
Primary Phone(s)	Email	

Participant and Program Information:

Functional Difference(s) (circle all that apply)			
Spinal Cord Injury Location: <hr/> Spina Bifida Cerebral Palsy	MS/MD/Muscle Disorder PTSD TBI/Stroke	Leg Amputee Arm Amputee Multiple Amputee: <hr/> Hearing Impairment	Visual Impairment: Total or Partial Other: <hr/>
Mobility/Assistive Devices			
Ambulatory Manual Wheelchair: Full-Time Part-Time Power Wheelchair: Full-Time Part-Time Crutches			AFO/Leg Braces Walker Cane Other: <hr/>
Level of Knowledge: (i.e., beginner, expert)			
Level of Mobility: (i.e., limited upper body strength, good upper body strength)			
Program Goals:			
Participant Needs: (i.e., equipment, services, interpreters, support)			

Other Pertinent Information: (that will help us make the best experience for you)
How did you hear about this program? (i.e., website, flyer, etc.)

Staff Training Phase Two

For the purposes of this section, most of the materials will be supplemental videos and PowerPoint presentations. These materials will be attached and added for increased support and for ease of understanding. This section will also include example activities to use for each technique to assist in learning and facilitating learning.

Giving Beta

Giving beta to participants can be incredibly important depending on the participants goals and needs. Giving beta can be a skill for staff, volunteers, or even friends who are helping out. Giving beta will depend on the functional differences as it requires the staff or individual giving beta to learn to see and understand body movement on the wall. Giving beta in an adaptive setting is similar to a coaching process. Giving the participant beta will allow for the belayer or a side climber to tell the participant the upcoming movement, body placement, or next hand/foot hold(s) necessary to continue making their way up the wall. This information given must consider the participants goals, range of motion, strength, and any other functional differences; as all participants are different giving beta must be done on a case-by-case basis to be successful.

An example **giving beta training activity** is as follows: Begin by having a staff member climb up an identified route without assigning them a difference. However, during this climb the staff participant can only make moves that their belayer calls out to them. This will allow the belayer to practice the different climbers positioning and will help them by allowing to better understand movement. This activity can also be adapted

by assigning a practice function difference to the climber and having them rely entirely on the beta of the belayer.

Side Climbing

Side climbing in itself is a skill, it requires a lot of attention, and intention. Side climbing is useful because the participant now has direct support, and an individual up there with them who can provide feedback, encouragement and physical assistance as needed. In order for staff to successfully employ this technique, the participant would have approximately one-three other individuals climbing near them. These other support individuals can assist the participant in hand or foot placements if strength or range of motion are an issue, these support individuals can also give beta and provide encouragement to the participant as they make their way up the wall or the rope. Side climbers are meant to stay at the same level or a lower level than the participant to provide assistance and encouragement without discouraging the participant by being perceived by the participant as being faster or more skilled than them.

An example **side climbing training activity** is as follows: Begin by having a staff member climb up an identified route without assigning them a difference. This staff member will also have two side climbers, one on each side, who will be providing assistance. Then this activity can also be done with only one side climber. This will allow the belayers and the side climbers to practice the different climbers positioning, giving effective beta, providing encouragement, and will help them by allowing to better understand movement. This activity can also be adapted by assigning a practice function difference to the climber and having them rely entirely on the beta of the belayer.

Another adaptation for this activity would be to have the side climbers practice using

different/varying levels of support to the climber, and can be adapted by using elastic bandage wraps, or other creative methods to help limit mobility to simulate a more real-world scenario of adaptive climbing.

Power Belaying

Power belaying is an incredibly useful technique, and many people power belay already without knowing it. It is important to touch on power belaying in this section as there are some techniques and things that can be used when more specifically focusing on adaptive climbing. This assisted belaying technique that typically relies on the belayer to use their body weight and/or a sandbag to help assist a participant up the wall. The belayer may need to use their body weight in conjunction with one or multiple sandbags and potentially even using a prusik. When beginning their power belay, the belayer will likely stand up on their toes and then sink or squat down with the rope to pull out as much slack as possible while maintaining rope tension and braking; if using an ascender the belayer will also lift their hand over their head to pull a greater amount of rope/slack out of the system. By using these techniques and equipment the belayer will keep constant tension on the rope. It is also important to note that this method should only be used with an assisted braking device.

An example **power belaying training activity** is as follows: Assign a staff member to be a participant, this participant will also be given instructions on one body part that they cannot use either entirely or partially for the length of the climb. This limitation will simulate what it is like to have a climber with a functional difference on the rope and will allow for the belayer to provide extra support and tension on the rope.

This activity can be adapted and changed to incorporate other techniques, staff members, or other creative manipulations in attempts to facilitate learning.

Mechanical Advantage Systems

For use within OP, it should be considered that the mechanical advantage systems are set up, and stored behind the wall. This allows staff members to use these systems without needing to take the time to complete the equipment's set up. This means that the OP director, Graduate Assistant (GA) and/or student manager control the system set ups and check to ensure that the equipment is functioning properly and does not have any wear or damage. This also allows for a more streamlined process in instituting adaptive climbing at the rock wall if there is not the option for full staff training, if staff are not confident, or if the OP director would like to ensure safety and proper set up.

As discussed earlier in this manual the mechanical advantage systems that will most likely be used include: 1:1 (Basic Ascending), 1:1 Redirect, 2:1, 3:1, 4:1, and 5:1. These systems range in complexity to set up, the amount of gear required, and the number of belayers needed to employ the system. For example, the 5:1 system will provide much more mechanical advantage and will be used for individuals who have very limited strength whereas the 1:1 system is used for individuals who have much of their upper body strength. The biggest importance here for staff training is repetition in both building and setting up each of these systems to build a knowledge base and deeper understanding.

Staff Training Phase Three

This next phase of the training includes the steps necessary to ensure the proper set up and checks required prior to using the adaptive equipment. This includes risk management and side to side system checks.

This phase of the training should also include practice clinics held by OP as well as assessment and comprehension checks to ensure that all staff are knowledgeable, confident, and competent in providing these skills and services to participants.

Risk Management

Managing and mitigating risk is of the utmost importance when working as staff but is arguably even more important when providing adaptive climbing services as these systems are usually more complex. Staff should keep in mind that systems should be managed, rigged and organized properly, as well as ensuring that personal protective equipment is being used. It is also important to mention gym infrastructure, human factors and system checks and why they must be utilized to mitigate other risks involved in an individual's participation in an event.

Side-to-Side System Check

This should be the last thing staff does before belaying a participant. This system check ensures that the system is set up and engaged properly. This check includes different steps for each part of the system beginning with the mechanical advantage system the staff should ensure that all pulleys are loaded correctly, carabiners are locked, and camming devices are engaged. When checking the fixed line, it is important to make sure that the ground anchor is secure, and the GriGri is threaded properly and backed up. When checking the belayer it is important to check that the harness doubles back, the

belay device is threaded properly, and that the carabiner is locked. When checking the participant, it is important to check that their harness doubles back, that the carabiners and connectors are locked, that the body position is correct and not uncomfortable, and that the ascender is tethered and on the rope.

Facility Orientation

The facility orientation provides an overview of Outdoor Pursuits climbing wall, bouldering wall, adaptive climbing, and auto belay system. This provides participants with general information about the facility, climbing areas, and types of climbing available. The facility orientation also outlines rules and regulations and is the first step required to be completed prior to commencing climbing at the wall.

Steps to Facility Orientation

- **Step 1:** Introduce yourself and welcome the participant(s) to the facility.
- **Step 2:** Inform participant(s) of the location of the restrooms, locker rooms, equipment checkout, elevator, cubbies for personal belongings, nearest AED, and first aid kit. Also, be sure to inform the participant(s) the policies and procedures for injuries and emergencies.
- **Step 3:** Go over policies for procedures for swiping into the facility
- **Step 4:** Inform participant(s) of the inherent risk and danger associated with rock climbing. We do everything in our power to keep you safe. Accidents are rare but can happen. You can help prevent these accidents from occurring by following our safety policies and procedures.
- **Step 5:** All climbers must be at least 18 years of age or have written consent from a parent or guardian to participate
- **Step 6:** Go over the following in detail while touring the facility:
 - **COVID-19 Policy**
 - All climbers and belayers must sanitize their hands before every climb

- All staff and participants must wear a mask or facial covering over both their mouth and nose at all times
- Staff and participants should avoid touching their nose, mouth, face mask, and/or faces as much as possible
- There will be no sharing chalk or communal chalk pots
- All staff and participants are required to sanitize their hands between each climb
- All staff and participants should ensure that they are not experiencing any of the symptoms of COVID
- All staff and participants should also ensure that they haven't come into contact with anyone who has COVID
- There is an 8-occupancy maximum – 6 climbers allowed on the top roping wall, 2 allowed on the bouldering wall
- On the top roping wall: participants should not be climbing on anchors directly next to each other
- On the bouldering wall: participants need to stay on either side of the bouldering wall without crossing paths while climbing
- *Personal Equipment*
 - A participant can rent shoes for \$1 at equipment check out
 - Shoes are not to be worn outside the climbing area
 - This includes the bathroom, 3 court gym, locker rooms, hallway or outside
 - Participants should have no loose jewelry, clothing, or loose hair

- Participants can rent harnesses for free at the climbing wall
- Participants can rent chalk bags for free at the climbing wall
- Participants can rent belay devices for free at the climbing wall
- Participants who are lead certified can check out a rope for lead climbing use within the facility

- ***Bouldering***

- This is a type of climbing that is performed without the use of ropes or harnesses.
- Inform participants that every fall is a ground fall and that these falls are inherently dangerous.
- Spotting may be recommended.
- Ensure to cover the following techniques with participants:
 - Appropriate falling techniques
 - Feet down, knees bent, down climb as much as you can
 - Spotting
 - Spoons, not forks
 - Cupped hands, arms slightly bent, under participant to catch them if they begin falling
- Topping out is not allowed under any circumstances
- Follow routes
 - Do not climb under another participant

- Do not climb in the way of another participant, wait and ensure the area is safe before commencing climbing
- ***Top roping***
 - This is a type of climbing where the anchor is already set, and the climber is protected with the rope and their belayer from the ground.
 - Inform participants not to climb under other climbers
 - Explain potential swing zones
 - Following routes
 - Do not climb under another participant
 - Do not climb in the way of another participant, wait and ensure the area is safe before commencing climbing
 - Point out the chalk pots IF available for use
 - Tie up ropes after use so they aren't hanging on the ground and acting as a potential tripping hazard
- ***Lead climbing***
 - This type of climbing is more advanced and requires climbers to clip into protection along the route. These participants are not using a pre-set anchor, this type of climbing can be more dangerous. The participant does not have an anchor set at the top when beginning.
 - Avoid pulling on gym draws

- Participants can get their fingers caught in them which can cause more serious injuries
 - Avoid pulling on bolts
 - Participants can get their fingers caught in them which can cause more serious injuries
 - Talk about “bad clips”
 - Z-clip
 - Backstepping the rope
 - Back clipping
- *Auto belay*
 - This is a device that allows climbers to practice their skills while providing no assistance from the rope/belayer
 - Any individual setting out to use the auto belay should check in with the climbing wall staff prior to use
 - The participants should clip BOTH carabiners to their belay loop on their harness and ensure that the screw gates are locked prior to climbing
 - Participants should begin with the carabiner that is attached directly to the auto belay followed by the extra carabiner that is attached to the auto belay via an extended piece of webbing
 - Allow the participant to put on a harness and climb up about 5-6 feet before falling to see how the machine is used

- *Adaptive Climbing*
 - Adaptive climbing services are also now offered here at the rock wall.
 - These services can be asked for when a participant comes down to the wall, or they can call ahead and speak with the OP director or GA about any questions or concerns they have
 - Individuals interested in participating in adaptive climbing services will be required to fill-out an intake/assessment form describing their functional differences, goals, and needs
 - The services offered here range from campusing, giving beta, side climbing or even employing mechanical advantage systems
 - *Further information on this can be found on the website, or by enquiring with climbing wall staff*
 - The wall and its staff will do everything in its power to offer services to all types of functional differences
- **Step 7:** Give ample time for participant(s) to read the safety signs posted and check that they understand the rules
- **Step 8:** At this time the climber may complete the Acknowledgement of Risk, the Waiver, and the Release of Liability form.

Belay Clinic

The belay clinic is an introductory clinic specific to techniques required for belaying. The climbing wall supervisors are responsible for demonstrating proper belay techniques using the PBUS method and using correct knots.

Belay Clinic

- The staff member should be able to demonstrate what proper belaying looks like to give the participants a visual of proper belaying, catching falls, tying knots and using commands.
- Harness
 - Inspect harness – ensure that belay loops, closures and hard points do not have excessive wear or fraying
 - The participant should then be shown:
 - The belay loop and that it is always worn in front
 - The leg loops should always be untwisted and stepped into
 - The waist should be tightened
 - Usually over the hip bones, tight enough where it cannot slip over the hips, or where you cannot put two fingers (two finger rule) in the harness and twist
 - The harness should be doubled back at all buckles
 - Leg loops should be tight against the body
 - For adaptive climbing, an individual might use a seat harness and a chest harness
 - Seat harness:

- Misty Mountain Easy Seat:
 - This padded seat harness has an integrated chest harness with back support.
 - The participant may be able to fit this harness by themselves or they may need assistance. Be sure to ask.
 - Ensure that this harness is put on correctly and fits properly
 - The harness should be snug, use the two finger rule, ensure that the participant feels supported and there are no pressure points
 - The harness should be doubled back at all buckles
 - Leg loops should be tight against the body
- Misty Mountain ARC Harness:
 - This harness is a thickly padded rigid seat harness, with full back support, and integrated chest and pelvis harnesses.
 - The participant may be able to fit this harness by themselves or they may need assistance. Be sure to ask
 - Ensure that this harness is put on correctly and fits properly

- The harness should be snug, use the two finger rule, ensure that the participant feels supported and there are no pressure points
 - The harness should be doubled back at all buckles
 - Leg loops should be tight against the body
- Full Body harness:
 - Is the incorporation of a chest harness and a regular waist harness. This harness requires less equipment to set the participant up, can be used with smaller children and provides greater support and stability for climbers.
 - Ensure that this harness is fit properly, it should be snug (follow the two-finger rule)
 - There should be no pressure points
 - All the buckles should be done properly
- Chest harness:
 - This harness is usually not padded but fits around the participant's chest at or below the nipple line.
 - Use the two finger rule to ensure that the harness is tight but not uncomfortably so
 - Also ensure that the participant is comfortable, and there are no pressure points

- The participant may be able to fit this harness by themselves or they may require assistance. Be sure to ask
 - Ensure that the harness is put on correctly and fits properly. The loops should not be twisted, the carabiner should be fastened through the correct points and the screw gate locked.
- Knots
 - The participant should be shown how to tie a figure eight follow through with approximately 6 inches of tail
 - Begin by making a loop in the rope and then following the rope through to create what looks like a figure 8
 - Feed the rope either through both hard points or from the belay loop if no hard points
 - Continue following the rope and dress the knot properly
 - Finish the knot with a double overhand knot
- Belaying
 - Sandbags can be attached to a belayers harness if the climber is heavier than them
 - Loading the belay device:
 - ATC (Air Traffic Control)
 - Place a bight of rope through the top of the ATC following the direction of load/diagrams to ensure the device is loaded properly.

- Pyramid
 - Get a bight of rope, press through the top (small end) of the pyramid then add the carabiner
 - Ensure that the pyramid is oriented correctly, small end at the top, larger end at the bottom
 - Following the directions on the device itself
- Grigri
 - With the Grigri open, feed the rope through the Grigri ensuring that the belay strand of the rope is the first in the device. Then pretend to load and test
 - Follow the instructions and arrows on the device itself for additional assistance in loading the device
 - Once the rope has been fed through attach a carabiner through the belay device and the belay loop of the harness
 - Lastly, lock carabiner
- PBUS Method:
 - P – Pull, down or up in a controlled manner
 - B – Brake, always keep hands in a brake position as it is the safest
 - U – Under, never let go of the rope with both hands, always slide and match hands
 - S – Slide, never let go of the rope and never get your hand too close to the belay device to avoid pinching. Slide hands.
- Power Belay:

- When utilizing a power belay, the belayer will need to maintain constant tension on the rope, the belayer might also want to use a progressive capture belay device. The belayer will use their body weight and/or sandbag(s) clipped to their harness as a counterweight to help hoist the participant up the wall.
 - If necessary the belayer can also use a prusik to assist with their power belay
 - This is often used when adaptive climbing services are offered
- ABCDEF Checks
 - Anchor – rope goes through both pieces of gear at the top of the wall
 - Specifically related to adaptive climbing:
 - Anchor also means ensuring that there is an anchor above and below the mechanical advantage system
 - Belay Device – ensure rope is appropriately loaded
 - Carabiner – always locked and not cross loaded
 - Double Back – harness straps are threaded back through the buckles so there is little chance of it coming undone during a fall
 - Eight Knot – ensure the knot is tied correctly, dressed and backed up with a double overhand knot
 - Footwear – ensure that the participant is wearing rock climbing shoes or close toed shoes if belaying
- Commands
 - Verbal Commands

- Beginning climbing:
 - Climber: On belay
 - Belayer: belay is on
 - Climber: climbing
 - Belayer: climb on
- While climbing:
 - Climber: slack
 - Belayer: ok, yep
 - Climber: take
 - Belayer: ok, yep
- After the climber reaches the anchor:
 - Climber: ready to lower
 - Belayer: lowering
- When finished climbing:
 - Climber: off belay
 - Belayer: belay off
- Tug Commands (Marhold Tug)
 - One tug signals for slack
 - Two tugs signals for tension (take)
 - Three tugs signals on belay or off belay
 - Four tugs signals to ask how much rope is left

- which is then returned by a number of tugs corresponding to the amount of feet of rope left
- Four tugs is only used for lead climbing purposes, not for top-roping purposes

Adaptive Climbing Clinic

The adaptive climbing clinic is an introductory clinic specific to techniques required for adaptive climbing. The climbing wall supervisors are responsible for demonstrating proper belay techniques using the PBUS method, using correct knots, using the correct equipment and techniques, and showcasing the different mechanical advantage systems used for adaptive climbing.

Adaptive Climbing Clinic

- Harness
 - Seat harness:
 - Misty Mountain Easy Seat:
 - This padded seat harness has an integrated chest harness with back support.
 - The participant may be able to fit this harness by themselves or they may need assistance. Be sure to ask.
 - Ensure that this harness is put on correctly and fits properly
 - The harness should be snug, use the two finger rule, ensure that the participant feels supported and there are no pressure points
 - The harness should be doubled back at all buckles
 - Leg loops should be tight against the body

- Misty Mountain ARC Harness:
 - This harness is a thickly padded rigid seat harness, with full back support, and integrated chest and pelvis harnesses.
 - The participant may be able to fit this harness by themselves or they may need assistance. Be sure to ask
 - Ensure that this harness is put on correctly and fits properly
 - The harness should be snug, use the two finger rule, ensure that the participant feels supported and there are no pressure points
 - The harness should be doubled back at all buckles
 - Leg loops should be tight against the body
- Full Body harness:
 - Is the incorporation of a chest harness and a regular waist harness. This harness requires less equipment to set the participant up, can be used with smaller children and provides greater support and stability for climbers.

- Ensure that this harness is fit properly, it should be snug (follow the two-finger rule)
- There should be no pressure points
- All the buckles should be done properly
- Chest harness:
 - This harness is usually not padded but fits around the participant's chest at or below the nipple line.
 - Use the two finger rule to ensure that the harness is tight but not uncomfortably so
 - Also ensure that the participant is comfortable, and there are no pressure points
 - The participant may be able to fit this harness by themselves or they may require assistance. Be sure to ask
 - Ensure that the harness is put on correctly and fits properly. The loops should not be twisted, the carabiner should be fastened through the correct points and the screw gate locked.
- Knots
 - The participant should be shown how to tie a figure eight follow through with approximately 6 inches of tail
 - Begin by making a loop in the rope and then following the rope through to create what looks like a figure 8

- Feed the rope either through both hard points or from the belay loop if no hard points
 - Continue following the rope and dress the knot properly
 - Finish the knot with a double overhand knot
- Belaying
 - Sandbags can be attached to a belayers harness if the climber is heavier than them
 - Loading the belay device:
 - Grigri
 - With the Grigri open, feed the rope through the Grigri ensuring that the belay strand of the rope is the first in the device. Then pretend to load and test
 - Follow the instructions and arrows on the device itself for additional assistance in loading the device
 - Once the rope has been fed through attach a carabiner through the belay device and the belay loop of the harness
 - Lastly, lock carabiner
 - PBUS Method:
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 - Anchor – rope goes through both pieces of gear at the top of the wall
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 - Carabiner – always locked and not cross loaded
 - Double Back – harness straps are threaded back through the buckles so there is little chance of it coming undone during a fall
 - Eight Knot – ensure the knot is tied correctly, dressed and backed up with a double overhand knot
 - Footwear – ensure that the participant is wearing rock climbing shoes or close toed shoes if belaying
- Commands
 - Verbal Commands
 - Beginning climbing:
 - Climber: On belay
 - Belayer: belay is on
 - Climber: climbing
 - Belayer: climb on
 - While climbing:

- Climber: slack
- Belayer: ok, yep
- Climber: take
- Belayer: ok, yep
- After the climber reaches the anchor:
 - Climber: ready to lower
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- Tug Commands (Marhold Tug)
 - One tug signals for slack
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 - which is then returned by a number of tugs corresponding to the amount of feet of rope left
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Gear/Equipment Used

- **Petzl GriGri**

- This is an assisted braking device that is useful for power belays, releasable fixed lines, belaying a participant who is heavier than you, and providing an extra layer or protection for the participant and belayer.
- Other assisted braking devices would work in place of the GriGri as well.
- **Petzl Freino**
 - this is a lock carabiner with a braking spur to thread the rope through. This adds extra friction and control for lowering or descending.
- **Semi-circular Carabiner**
 - This piece of equipment is a multi-directional semi-circular carabiner that is useful when connecting a participant's chest harness to devices, or wherever a triaxial load is expected.
- **Oval Locking Carabiner**
 - This piece of equipment is useful when connecting pulleys to other components within the system.
- **Steel Triangle Maillon**
 - This steel triangle maillon is used mainly in connecting the seat attachment of a seated harness to a chest harness connection point.
- **Progressive Capture Double Pulley**
 - A double pulley, two sheaves, that also includes a camming mechanism to allow for progressive capture. This is of great importance when building mechanical advantage systems.
- **Misty Mountain Easy Seat**

- This is a seated harness specific for adaptive climbing. This seat harness has a padded seat, chest harness and back support. This harness is commonly used but offers less support than the Misty Mountain ARC Harness.
- **Misty Mountain ARC Harness**
 - This seated harness allows for more support, including full back support and thick padding. This harness is sturdier and allows for individuals to have increased stability while climbing.
- **Swivel**
 - This is used mostly for hauling or mechanical advantage systems. This piece of equipment will prevent the rope from twisting even if the load, gear or a participant, is turning.
- **Handlebar Ascender**
 - This could be a threaded rod inserted into the lower attachment hole of the Petzl ascender. This helps to accommodate a handlebar for a better adaptive grip, and active hands if necessary.
- **Ascender**
 - A handle ascender also sometimes referred to as a rope clamp. This is useful when climbing or pulling on ropes specifically for progression or progressive capture. The handle ascender has a right and left hand orientation, this is important to note based on a participant's dominant side use. The handle ascender, found in image four, is used by a participant raising their arm above their head and pulling down on the ascender to

assist them in moving up the rope. The Croll ascender, found in image five, is used to attach the participant to their chest and seated harness.

- **Active Hands**
 - Used for individuals with limited hand strength or dexterity. Active hands are a glove with a grip assist allowing them to be wrapped around a handlebar ascender with Velcro, so the participant does not lose their hand placement.
- **Rigging Plate/Bear Claw**
 - This is a piece of equipment that is used to help organize the carabiners and sections of rope when rigging an adaptive system.
- **Super Eight Knot**
 - This knot is used often in adaptive climbing and in building anchors for climbing outdoors. This knot has more redundancy and is stronger than other knots and is therefore a standard knot used for rigging adaptive systems.
- **Double Pulley**
 - Has two separate sheaves that the rope can run through.
- **Single Pulley**
 - This is a pulley with only one sheave, this is useful for building mechanical advantage systems.
- **Progressive Capture Single Pulley**

- A single pulley, one sheaf, that also includes a camming mechanism to allow for progressive capture. This is of great importance when building mechanical advantage systems.

Techniques

- **Campusing**

- Participants use only their upper body to progress up the wall. When a participant campuses, they are just using their hands and arms, not their feet or lower body.
- When using this technique for adaptive climbing, a power belay is often needed, and slightly overhanging walls or steeper walls are useful.
- When campusing, there is occasionally a need for increased protection for the participant such as using knee pads and a full body harness.

- **Giving Beta**

- Giving the participant beta will allow for the belayer or a side climber to tell the participant the upcoming movement, body placement, or next hand/foot hold(s) necessary to continue making their way up the wall.
- This information given must consider the participants goals, range of motion, strength, and any other functional differences; as all participants are different giving beta must be done on a case-by-case basis to be successful.

- **Side Climbing**

- Side climbing is useful because the participant now has direct support, and an individual up there with them who can provide feedback, encouragement and physical assistance as needed.
 - These other support individuals can assist the participant in hand or foot placements if strength or range of motion are an issue, these support individuals can also give beta and provide encouragement to the participant as they make their way up the wall or the rope.
 - Side climbers are meant to stay at the same level or a lower level than the participant to provide assistance and encouragement
- ***Power Belaying***
 - This assisted belaying technique that typically relies on the belayer to use their body weight and/or a sandbag to help assist a participant up the wall.
 - The belayer may need to use their body weight in conjunction with one or multiple sandbags and potentially even using a handle ascender.
 - By using these techniques and equipment the belayer will keep constant tension on the rope. It is also important to note that this method should only be used with an assisted braking device.

Mechanical Advantage Systems

1:1 System (Basic Ascending)

Physical Requirements	Full upper body strength required
Equipment Required	2 locking carabiners; 1 Sit harness; Croll ascender; 1 Chest harness; and a handlebar ascender.
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Clip the Croll Ascender between the sit harness and chest harness 3. Make sure make sure the handlebar ascender is placed above the climber 4. Set up the climber on both the master top rope and the back-up belay with a second back-up top rope 5. Complete a Side to Side System Check on the system, and start climbing

1:1 Redirect Mechanical Advantage System

Physical Requirements	Full upper body strength required
Equipment Required	2 locking carabiners; 1 motion capture pulley; 1 Sit harness; 1 Chest harness; Static rope that is double the height of the wall; and a second ascender, preferably handlebar.
Set Up	<ol style="list-style-type: none">1. Use two locking carabiners to create a master point on a single strand of rope for the top rope2. Run the rope through the motion capture pulley then back down to the participant3. Haul the system into place4. Make sure the handlebar ascender is placed above the climber5. Set up the climber on both the master top rope the back-up belay with a second back-up top rope6. Complete a Side-to-Side System Check on the system, and start climbing

2:1 Mechanical Advantage System

Physical Requirements	Ability to lift at least half of their body weight
Equipment Required	<p>3 locking carabiners;</p> <p>1 single pulley;</p> <p>1 progressive capture pulley;</p> <p>Static rope that is three times the height of the wall;</p> <p>1 Sit harness;</p> <p>1 Chest harness;</p> <p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope secured using an eight knot on a bight on one end of the rope 2. Use one locking carabiner to secure the progressive capture pulley to the participant's harness 3. Run the rope down through the motion capture pulley then back up through the single pulley and back down to the participant 4. Haul the system into place 5. Make sure make sure the handlebar ascender is placed above the climber 6. Set up the climber on both the master top rope the back-up belay with a second back-up top rope 7. Complete a Side-to-Side System Check on the system, and start climbing

3:1 Mechanical Advantage System

Physical Requirements	Ability to lift at least one third of their body weight
Equipment Required	<p>3 locking carabiners;</p> <p>1 progressive capture pulley;</p> <p>1 double pulley;</p> <p>Static rope that is at least four times the height of the wall;</p> <p>1 Sit harness;</p> <p>1 Chest harness;</p> <p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope for the top rope 2. Run the rope through one sheave of the dual pulley then back down to the participant 3. Next run the strand of rope up through the progressive capture pulley that is clipped into the participants harness using 1 locking carabiner 4. Next, the rope will be run back up through the other sheave of the dual pulley and lastly back down to the participant 5. Haul the system into place 6. Make sure make sure the handlebar ascender is placed above the climber 7. Set up the climber on both the master top rope the back-up belay with a second back-up top rope 8. Complete a Side-to-Side System Check on the system, and start climbing

4:1 Mechanical Advantage System

Physical Requirements	Used for climbers with greater restrictions on mobility and limited strength
Equipment Required	<p>5 locking carabiners;</p> <p>1 motion capture pulley;</p> <p>1 double pulley;</p> <p>1 single pulley</p> <p>Static rope that is at least five times the height of the wall;</p> <p>1 Sit harness;</p> <p>1 Chest harness;</p> <p>1 rigging plate;</p> <p>and an ascender, preferably handlebar.</p>
Set Up	<ol style="list-style-type: none"> 1. Use two locking carabiners to create a master point on a single strand of rope using an eight knot on a bight for the top rope clipped into a rigging plate 2. Run the rope up through the single pulley on the participants harness (clipped in using a carabiner) and one sheave of the dual pulley then back down to the participant 3. Next run the strand of rope up through the motion capture pulley that is clipped into the participants harness using 1 locking carabiner 4. Next, the rope will be run back up through the other sheave of the dual pulley and lastly back down to the participant 5. Haul the system into place 6. Make sure make sure the handlebar ascender is placed above the climber 7. Set up the climber on both the master top rope the back-up belay with a second back-up top rope

	8. Complete a Side-to-Side System Check on the system, and start climbing
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Staff Training Phase Four

This final phase of the training is to be developed by the SUNY Cortland Outdoor Pursuits Assistant Director. This phase of the staff training is to include the necessary steps to ensure that all staff are trained properly and that there is an assessment protocol in place. This includes risk management by the OP Assistant Director to ensure that they feel as though they are confident in building each adaptive system as well as their staff being able to build each system, assessment/comprehension checks, and a regular training schedule.

This phase of the training should also include practice clinics held by OP every three months beginning in August, November, January, and April, as well as assessment and comprehension checks to ensure that all staff are knowledgeable, confident, and competent in providing these skills, building these systems, and providing any other services to participants. These criteria should be dependent on how the program initially institutes these programs and at the discretion of the OP Assistant Director in their professional expertise.

Useful Links

Listed below are links to blog posts, adaptive specific organizations, and other governmental resources. The links provided are not an all-encompassing list, and there are many other useful sites that can be found and used. These links are added here for any further guidance that OP may need or be interested in looking at. They can be used for assistance in understanding cultures and communities, functional differences, and any resources potentially needed for equipment or guidance with mechanical advantage systems.

www.inclusiverec.org

www.unitedspinal.org/disability-etiquette

<https://www.commonclimber.com/advocating-for-deaf-climbers.html>

<https://www.rei.com/blog/climb/this-group-is-changing-the-way-climbers-communicate>

www.paradoxsports.org

www.adaresources.org

www.disability.gov

www.adaptiveadventures.org

www.adaptiveclimbinggroup.org

<https://www.outsideonline.com/2052131/inside-look-adaptive-rock-climbing-paradox-sports>

<https://mistymountain.com/>

<https://www.petzl.com/US/en>

<https://www.moveunitedsport.org/sport/rock-climbing/>

<https://ability360.org/adaptive-climbing/>

<https://www.nolimitstahoe.com/gear/>

<https://animatedknots.com/>

<https://www.activehands.com/>

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

Summary

Based on the needs of the SUNY Cortland Outdoor Pursuits this project sought to create a comprehensive adaptive climbing system inventory, and create a staff training manual. The impetus for the development of these items were the concerns expressed by Connor Cumisky, Assistant Director of Outdoor Pursuits, during the needs assessment interview. Upon completing the needs assessment interview the information gained was analyzed and synthesized into three succinct categories (1) administrative structure and function, (2) human and physical resources, and (3) program and participants. These three categories were then used as the basis for this report. This report offers recommendations for changes to the Outdoor Pursuits program structure, a staff training manual, and an adaptive system inventory. These recommendations, were then used to help provide structure in designing the staff training, acquiring adaptive climbing equipment, advertisement, and creating a transitional process for implementation.

This project has led to the creation of a comprehensive adaptive training system inventory, a staff training guide, and supplemental materials of videos and PowerPoint presentations for increased clarity and understanding of trainees and staff. These materials serve as a blueprint for the creation of an adaptive climbing program and expansion of overall adaptive services at SUNY Cortland's Outdoor Pursuits.

Conclusions

Analysis of the needs assessment interview data allowed the following conclusions to be drawn about the current structure and organization of the climbing program at SUNY Cortland Outdoor Pursuits:

Administrative Structure and Function

- SUNY Cortland Outdoor Pursuits' major mode of advertising is via word of mouth. While being a cost effective method for promoting awareness of an organization and gaining new participants, this method of advertising has limited bandwidth and does not seem to reach many areas of campus.

Increased efforts to promote and market programs through the campus communication, fliers, staff outreach, and social media accounts would be useful in obtaining a greater participant base.

- Funding is a major drawback for this program, as Outdoor Pursuits does not have a defined budget; as such, it can be difficult to source

and spend money on updating equipment, acquiring necessary equipment, and promoting services.

Defining a funding stream or establishing a standalone budget each semester or fiscal year would be helpful in determining event planning, program sustainability, equipment acquisition, and the overall operation of the adaptive programming.

- Finally, Outdoor pursuits does not currently engage in any type of strategic planning process. Accordingly, Outdoor Pursuits should begin the process of developing and maintaining both short-term and long-term strategic goals. Short-term goals should include objectives related to program start-up and acquisition of equipment for the next one - three years. Long-term goals should include a vision for the future of the program as it builds a reputation and user base, this time frame would be for the next four - ten years.

Human and Physical Resources

- If Outdoor Pursuits wishes to offer and sustain adaptive climbing programming, they will either need to work out a schedule with the RPLS Department to provide necessary gear and equipment or begin purchasing the equipment for themselves.
- All equipment should have an up-to-date inventory and tracking system for use, wear and tear, repairs and maintenance, and replacement.

- Mandatory staff training should be provided to all staff at the beginning of each semester, and systematically throughout the course of the year (August, November, January, and April) and prior to each scheduled adaptive program. Trainees will be required to show skill proficiency prior to assisting or facilitating any activity involving participants, this is to be determined at the discretion of the OP Assistant Director. All staff members should also receive training evaluations at the end of each semester to ensure that they are keeping up-to-date on their skills.
- In addition to the beginning of the semester and prior to event trainings, all staff should receive required mini in-service trainings to maintain skills proficiency, acquire new skills, and maintain knowledge of industry standard information or techniques.

Program and participants

- Adaptive programming is a significant undertaking for Outdoor Pursuits, but the provision of more inclusive programming will offer significant benefits for individuals with functional differences. Further, by allowing, and even encouraging, peer participation, program participants could derive even greater enjoyment from the activity.
- Each scheduled adaptive program, or daily service, should place an emphasis on two elements, (1) fun, enjoyment, and freedom of expression; and, (2) setting goals and skill development. The exact

makeup of these two categories will be specific to each individual participant and their needs and interests.

- All participants in the adaptive climbing program should submit, prior to participating, a medical form, waiver/release of liability, a pre-assessment or intake form/interview. The acquisition of this information and these documents is paramount to being able to offer individualized services to participants and ensuring that their needs can be successfully met.
 - These documents should include, but are not limited to: prior participation, medical history, perceived physical fitness level, adaptive devices used for mobility if applicable, and supports or accommodations needed.
- Beginning by offering scheduled programs on a monthly, bi-weekly, or weekly basis allows Outdoor Pursuits to obtain feedback from participants and staff on the adaptive activities; as well as, providing additional opportunities for program advertising and the cultivation of new levels of interest in adaptive programming for future implementation of services.

Recommendations

Should SUNY Cortland Outdoor Pursuits decide to make the transition to offering more comprehensive and inclusive climbing services, the following recommendations ought to be considered to improve the likelihood of success:

- a) Prior to beginning any other part of this process, it is the researcher's recommendation that SUNY Cortland Outdoor Pursuits buys and begins looking over and utilizing the Paradox Sports Adaptive Climbing Manual and the Paradox Sports Handbook. These items were the basis of this project and provide more information and illustrations.
- b) It is also imperative that the Assistant Director of OP begins attending Adaptive Climbing events and obtaining a baseline knowledge of building the systems, using the systems, and interacting with individuals who may be using the systems.
- c) As a part of the transition process to offering more comprehensive services, Outdoor Pursuits should look at the program's Mission, Vision, and Values to ensure that they reflect the new services being offered and the future direction of the program.
- d) Formulate a strategic plan.
 - The Outdoor Pursuits strategic plan should incorporate important milestones like the development of enhanced staff training, improved gear acquisition processes, methods for increasing interest in programming, establishment of a clear marketing/promotion plan, sustainable budget management,

and the establishment of ongoing risk management monitoring processes.

- e) Outdoor Pursuits should develop their own personalized criteria for assessment of staff and staff training to ensure that each individual staff member has the confidence and competence to run adaptive programming.
- f) Outdoor Pursuits should develop a more robust training schedule and training assessment protocol based on the recommendations from Student Health Services, SUNY Cortland Legal Team, the SUNY Cortland Disability Services Office, and the expertise of the SUNY Cortland Outdoor Pursuits Assistant Director.
- g) Use the provided equipment inventory.
 - This will allow for Outdoor Pursuits to:
 - i. Purchase the gear necessary
 - ii. Identify each individual piece of gear
 - iii. Organize the gear required for each adaptive system
- h) Begin staff training with the Director, Assistant Director, and Graduate Assistants to enhance their professional comfort and knowledge with/of climbing equipment and procedures prior to expanding training to other employees, including the rock wall Manager and Assistant Managers. A training guide has been created in conjunction with this project to be used as a resource guide. This training should cover, at minimum:

- The purpose and function of each adaptive system
 - How to build each system
 - Effective communication with individuals with functional differences (etiquette, etc.)
 - Program planning (special adaptive events, and daily services)
 - Marketing and promotion (special events, and daily services)
- i) Expand the program slowly and in line with strategic management goals. Potentially implementing a pilot where one adaptive event happens each month, then bi-weekly, weekly, and eventually move up to daily if possible.
- Establish a rotating schedule for events that is displayed at the rock wall, Outdoor Pursuits office, equipment checkout, on social media pages, and in the Student Life Center.
- j) Create and administer participant satisfaction surveys
- These surveys should be given or emailed to each individual who participates in an adaptive climbing event and should ask questions pertaining to individual satisfaction and overall program satisfaction.
 - i. Interest in the program/event
 - ii. How the individual learned about the event
 - iii. What specifically they enjoyed
 - iv. What specifically they did not enjoy
 - v. What could be changed for next time

Whether SUNY Cortland Outdoor Pursuits expands their program format to include adaptive climbing services or not, this proposed plan and handbook serve as a resource guide for training, offering, and evaluating services. Further, this plan can serve as a blueprint for beginning the transition, or for ongoing program operations. Finally, this plan can be changed and adapted as services change, as equipment changes, and as staff training requirements evolve.

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Appendix A: PERT Chart

Project Timeline (PERT)

	O= begin work	X= complete work	Mar	April	M/J/J	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April
Prospectus														
Submit			X											
Prepare oral presentation			O	X										
Present Project proposal				X										
Revise based on committee feedback				O	X									
Project Committee														
Identify Committee Members			O			X								
Contact and follow up with members			O			X								
Instrument														
Develop Needs Assessment Survey			O				X							
Discuss with faculty for content validity			O				X							
Revise			O				X							
Chapters														
Chapter 1			O				X							
Chapter 2			O					X						
Chapter 3			O					X						
Data Collection														
Administer Needs Assessment							X							
Data Analysis														
Analyze Data							O	X						
Chapters														
Chapter 4								O		X				
Chapter 5								O		X				
Final Draft										O			X	
Defense														
Project Defense														X
Submit and Register Project Copies														X

Appendix B: Needs Assessment Interview Questions

Needs Assessment Interview Questions

The purpose of this interview is to gather information on and identify models of best practice used in SUNY Cortland Outdoor Pursuits programs. The interview will be recorded to ensure that results can be later transcribed and analyzed for further clarification. The interview should take approximately thirty minutes to one hour. By participating in this interview, you are helping us learn more about the currently offered recreation and leisure programming, and the needs of the program moving forward.

I. Administrative Structure & Function

1. What are your current program goals?
2. Have there been any significant changes in the current direction of your program goals in comparison to past program goals (i.e., due to change in participant base, participants needs/interests, etc.)?
3. Where does your funding come from (i.e., grant, federal, state, donations)? Of those funding sources, what is the percentage of income from each?
4. What is your annual budget for the climbing wall and related activities? Do you use usage data to help make budget decisions? What items are included in your annual budget?
5. How do you promote and market your organization and services to the campus?

II. Human & Physical Resources

1. How many employees do you have? What is the mix of full and part time employees? Do you maintain a list, or can you list the positions people are employed in?
2. How would you characterize or describe your “typical” staff member (i.e., qualifications, experience)?
3. Are there any specific education, experience, training, certification, or background requirements preferred when hiring for staff positions? If so, which ones?
4. Does your organization provide any certifications and/or training opportunities for staff? If so, which ones?
5. Is there any type of training or orientation staff must complete before working with the program?
6. Is there any training or orientation specific to adaptive and inclusive programming? Why/why not?
7. What types of facilities/settings do your programs take place in (i.e., outdoors/indoors, park, gym, resort, etc.)?
8. What is your relationship with the Student Life Center when it comes to programming and other support? Are you required to pay for the use of outside spaces/areas?

9. Does the Student Life Center subsidize or provide any components necessary to the success of your organization (i.e., facility, facility costs, equipment costs, entrance fees, parking, etc.)?
10. Do you have adaptive equipment? If so, how did you acquire the necessary adaptive equipment (i.e., donations, purchase at cost, etc.)? If not, do you plan to acquire any adaptive equipment?
11. Do you have an equipment inventory tracking system in place (i.e., keep records of when equipment is received/purchased, maintenance/repairs made, frequency of use, etc.)?
12. Has there been an inclusivity assessment completed on the climbing wall area by the inclusive recreation resource center? If yes, what did it find? Have those challenges been addressed? If not, would you be willing to have one done?

III. Programs & Participants

1. How do participants register for a program?
2. What type of information is gathered from a participant before participation in any type of program (i.e., personal info, medical info, liability waiver)?
3. Are programs inclusive of persons with and without disabilities?
4. Are there any programs specialized and specifically designed to serve only persons with disabilities?
5. Do you offer any special events specifically related to adaptive climbing (i.e., weekly, annual, once-a-month, etc.)? If not, would you be willing to?
6. Do you collaborate with any other local programs and/or organizations on certain events or programs?
7. Among your participant population, what types of special needs or disabilities do you offer services for, if any?
8. Do you plan to advance and enhance the adaptive and inclusive services your organization offers?
9. Do you plan to add adaptive and inclusive programming? If not, why?
10. What are participant fees? Is the fee charged annually, per visit, per program, etc.?
11. What do participant fees include (i.e., equipment, transportation)?
12. Are there any scholarships/subsidies offered to participants who have financial constraints? If so, at what level
13. If scholarships or subsidies are offered, what criteria are used to determine eligibility for financial assistance?

IV. Questions &/or Comments

Thank you very much for taking the time to talk with me today. Your information will be immensely helpful as the exploration for changes to SUNY Cortland Outdoor Pursuits changes. Please feel free to contact me if you have any questions or comments later. Again, thank you.

Appendix C: Needs Assessment Findings

SUNY Cortland Outdoor Pursuits Adaptive Rock Climbing Training Guide and Handbook Needs Assessment Findings

Overview of Project

Following the administration of the needs assessment specific to the needs, goals, and future interests of SUNY Cortland Outdoor Pursuits (OP) and their participants, a comprehensive training guide and adaptive systems handbook will be created as a reference for OP to use in the future should they decide to expand their programs to include individuals with functional differences. To effectively create these materials, a needs assessment was conducted with the assistant director of the program to gather relevant information. The information gathered from the interview has been analyzed and organized into categories in relation to the overarching themes of administrative structure and function, human and physical resources, and programs and participants.

Administrative Structure and Function

Funding

The needs assessment highlighted concerns regarding funding as the OP climbing wall does not have a budget of their own, instead their budget falls under the broader scope of Recreational Sports. Meaning that when equipment needs to be ordered for the climbing wall facility the invoice or request must go to the Student Life Center director

for approval. The assistant director for Outdoor Pursuits is given a procurement card, but this cannot be used without approval and is only for limited uses. Funding related to the climbing wall and equipment can come from student activity fees and student life center fees paid through the tuition process. The lack of a clearly defined program budget is a constraint on the programs ability to plan for and purchase the necessary equipment for allowing or hosting adaptive rock climbing events. This is a constraint because in the past the Student Life Center (SLC) director was not overly concerned with offering more comprehensive services to individuals. It is also a constraint because it requires a lengthier process to get equipment orders approved, and because there are not specific funds set aside anyone else under the title recreational sports in the SLC could use the funds for other things.

The needs assessment also identified that there are currently no fees to use the facility outside of those that are charged with tuition apart from one dollar climbing shoe rentals at equipment check out in the Student Life Center. Therefore, there are no scholarships or grants that are given to students to help offset the cost of the activity.

Location

The needs assessment identified the climbing walls set up may also be a barrier to participation. The climbing wall's location within the SLC is not exceptionally large and does not allow for many individuals to access the facility at one time. In the future, if/when OP decides to implement adaptive programming, it will be difficult for individuals to use the facility due to the high step between the bouldering mats and the bouldering wall, and the small area surrounding the top-roping wall. This would limit the amount of people able to access the facility due to some areas not being easily wheelchair

accessible. The facility would not be able to accommodate many individuals for programming which could be discouraging to individuals who show up. Although it would not limit the adaptive equipment used, it would create some difficulties in allowing for the space to build and store the equipment.

Advertising

Currently, Outdoor Pursuits climbing wall uses only word of mouth, social media accounts, the campus communicator, fliers, as well as printed and posted signage around the building to obtain their participant base. Greater efforts to promote and market the organization could be beneficial in establishing a budget or adding more inclusive services into their regular schedule of workshops, daily use, and especially for events. Although there were not any specific examples of this provided in the need's assessment, it has been anecdotally acknowledged by staff and other participants that some planned events do not get enough recognition or participants based on the amount of advertising used. However, it has been identified that many participants who use the facility currently become regulars and are usually RPLS students.

Human and Physical Resources

Equipment

SUNY Cortland Outdoor Pursuits climbing wall currently does not own any of its own equipment, the program borrows or shares equipment with the RPLS department. Much of this owned equipment is used by RPLS students and faculty at Central Rock Gym in Syracuse when adaptive climbing clinics are held monthly. The assistant director

of Outdoor Pursuits is uncertain as to what gear is owned and shared between RPLS, this is of importance when instituting adaptive programming because if OP does not have their own gear or full access to the gear necessary for building specific systems then they will not be able to offer some adaptive services. The acquisition of gear specific to OP and RPLS is of significant importance in ensuring that both RPLS and OP will have success when hosting or volunteering for adaptive programming. However, the needs assessment identified that OP does not have its own budget which could potentially be problematic in the purchasing requests in relation to the acquisition of the needed gear.

The current equipment that is owned and used, such as rock climbing shoes, ropes, harnesses, and belay devices can be borrowed or rented (in the case of shoes) at the climbing wall. This equipment has an inventory tracking system using the software *Fusion* by Innosoft Technologies.

Staff Training

The OP climbing wall employs fourteen students as “climbing wall supervisors,” one manager, one assistant manager, and one graduate assistant. These positions gain responsibilities relative to their position in the OP’s hierarchy, and all report to the assistant director of Outdoor Pursuits. When hiring climbing wall staff, preferred qualifications include climbing experience, customer service experience, outdoor recreation experience. Specifically relating to the manager and assistant manager, these positions are preferred to be filled by individuals who have held previous management positions, who have experience supervising climbing walls, or have managed another climbing facility. Regarding the graduate assistant it is preferred that they have a more robust climbing specific knowledge base potentially including American Mountain Guide

Association (AMGA) or Professional Climbing Instructors Association (PCIA) certifications, as well as experience with indoor and outdoor rock climbing and route setting.

SUNY Cortland Outdoor Pursuits assistant director, graduate assistant and climbing wall manager will host regular trainings on an annual or semester basis for the staff. Regular trainings are set up as refresher courses intended to get staff to demonstrate proficiency in topics including leading facility orientations, single rope rescues, and delivering lead and belay clinics. All newly hired staff members must go through a broader training that includes responding to emergencies, learning opening and closing polices, teaching clinics e.g., the facility orientation, and simple rescues e.g., ascending a rope.

The needs assessment identified that there currently is little to no training given on adaptive or inclusive programming. The staff have had some exposure to adaptive climbing concepts through short one day and one-off trainings for things like person-first language and inclusivity. The assistant director of SUNY Cortland's Outdoor Pursuits showed a willingness to offer more trainings but has concerns about their own personal knowledge and the knowledge of the staff employed for the climbing wall.

Programs and Participants

Special Events and Registration

The needs assessment identified that registration for a program is specific to the program being hosted. Clinics such as lead and belay are held regularly at the climbing

wall, those do not need to be registered for, they can be asked for when an individual is using the facility during open hours. Workshops such as rappel are first come first serve, but there is no formal registration process. For events such as green dot, the adventure race or the climbing competitions individuals will use Fusion or an app/software specifically for intermural sports and special events called IM Leagues to register their participation in the event.

The needs assessment also identified that in the past the climbing facility has had limited collaboration between the RPLS department and AMGA, this included hosting small, specific training to a group of recreation students as well as an independent study with a former student. These are not offered on a regular basis.

Assessments

The needs assessment identified that the current assistant director of Outdoor Pursuits is unsure as to whether an inclusivity assessment has been done on the facility but shows a willingness to participate in doing an initial or updated assessment of the facility. In my research an inclusivity assessment of Outdoor Pursuits was done in 2016 by Geoffery Peppell who interviewed the previous Outdoor Pursuits assistant director Jason Harcum, in 2018 an inclusivity assessment was done in 2018 by a group of RPLS students. These assessments suggest that the facility and the activity areas themselves are accessible, the greatest barrier being the change in surface between the tiled flooring onto the rubber flooring for the top-roping wall, and the lip between the tiled flooring onto the bouldering mats.

Adaptive Programming

The needs assessment identified that the current climbing wall program allows for ability specific adaptive or inclusive programming, currently for individuals who may have a visual impairment or be on the Autism Spectrum. The needs assessment also identified that there are no programs specifically designed to serve individuals with functional differences, or collaboration with local programs or agencies that serve this population. The assistant director for Outdoor Pursuits has shown a willingness to advance, create, and/or enhance adaptive and inclusive services at the climbing wall including regular events or special events, however no formal plan is currently in place.

The needs assessment interview identified concerns regarding staff training and equipment needs in the institution or creation of adaptive and inclusive programming. It is uncertain if staff will be able and willing to learn about adaptive systems and employ their proper use, as well as concerns regarding the upkeep of this knowledge via staff training.

Conclusion

The needs assessment highlighted programming deficits within related to its ability to sustain adaptive climbing programming, thus the development of a comprehensive staff training manual and adaptive systems handbook would provide an avenue for addressing these systematic problems. This needs assessment identified not only the strengths of the OP program, but also its weaknesses. The needs assessment identified that OP is limited currently by its marketing, budget, access to adaptive

equipment, and lack of staff knowledge & training. Of these limitations, the lack of funding and access to adaptive gear are the most significant if an adaptive climbing program is going to be sustainable in the long term. Accordingly, having a curriculum or guide to reference could help with the justification for the creation of a budget or the spending of funds on necessary equipment to further the program and the services given to SUNY Cortland affiliated individuals.

Beyond budget equipment, the needs assessment also identified that the assistant director for OP is interested in developing the climbing program and extending the services currently offered. The desire to enhance current programming at the climbing wall coupled with this project could accelerate the development process for OP. Further, with the completion of a comprehensive guide, OP would be able to develop and institute adaptive programming to enhance the services given directly to the SUNY Cortland campus and affiliated individuals.

Appendix D: Essential Eligibility Criteria (EEC)

SUNY Cortland Outdoor Pursuits Climbing Wall

Essential Eligibility Criteria (EEC)

SUNY Cortland Outdoor Pursuits program has been developed to offer programming for all individuals who are affiliated with SUNY Cortland to take part in opportunities to experience and enjoy recreation and leisure activities. The goal of SUNY Cortland Outdoor Pursuits strives to be a program in which transformational education is paramount. Outdoor Pursuits goal is to provide programming and activities that allow individuals to take great adventures and make good friends.

Participant's health and safety are the top priority of Outdoor Pursuits. To minimize risk to a group or individual participating in an activity or Outdoor Pursuits program, each individual must take responsibility for themselves and participate within the boundary of their own limits.

Outdoor Pursuits values diversity and strives to be inclusive of individuals of all ability levels. These EECs are a list of physical and cognitive requirements for participation in any program or activity at Outdoor Pursuits Climbing Wall. These are intended to be a resource for any individual who is considering participating in a program or activity at SUNY Cortland Outdoor Pursuits Climbing Wall and are not designed to be exclusionary.

To help you identify the skills you will need to safely participate in programming at the Climbing Wall, Outdoor Pursuits has developed the following Essential Eligibility Criteria (EEC). If you are unsure of your ability to meet certain criteria or need any clarification, please contact us; we may be able to assist you with a reasonable accommodation unless it would change the fundamental nature of the program or experience, compromise the safety of yourself as the participant, other participants or the staff, or would place undue financial or administrative burden on Outdoor Pursuits.

SUNY Cortland Outdoor Pursuits Climbing Wall Essential Eligibility Criteria is applicable to all Climbing Wall participants. A qualified person is one who can meet the below Essential Eligibility Criteria.

Definitions:

Aid: an individual who is aware of and familiar with the participants medical condition (cognitive and/or physical differences). This individual often assists the participant on a regular basis and is qualified to provide assistance.

Indoor Rock Climbing EEC

(This EEC pertains to all SUNY Cortland Outdoor Pursuits Climbing Wall activities and programs)

Each participant must be able to:

- Breathe independently
- Access and exit SUNY Cortland's facility independently or with the assistance of an aid. Ease of access may be impacted by weather, and business of the facility at any given time.
- Independently, or with assistance from an aid, understand and follow directions and instructions given by others to avoid hazards, and manage risks. This includes following emergency procedures.
- Self-transfer or transfer with the assistance from an aid (not provided) in transferring from their wheelchair or other mobility device.
- Independently tie into a harness using a figure eight follow-through or with assistance of an aid.
- Independently, or with assistance from climbing wall staff, put on and take off required safety equipment (seat, chest, full-body harness, helmet). This equipment should also properly fit the participant.
- Independently or with assistance of adaptive equipment (chest harness, full body harness, chest harness, easy seat harness) maintain an appropriate and safe body position while in the harness (chest harness, full body harness, chest harness, easy seat harness), for the duration of the climb.
- Independently, or with assistance from an aid, use necessary climbing signals. This may include spoken signals, hand signals, or rope tugs (Marhold tug).
- Independently, or with assistance from an aid, notify staff members of any personal distress, injury, or illness.

- Independently or with the assistance of an aid perform necessary self-care, such as maintaining adequate nutrition, maintaining hydration, dressing appropriately for temperate conditions, maintain personal hygiene, managing known medical conditions.

Appendix E: Staff Training Guide PowerPoint Slides



Adaptive Rock Climbing Staff Training

Prepared by Rebekah Mills



Introduction

- This presentation has been prepared to be used in conjunction with the prepared Masters Project, the Paradox Sports Adaptive Climbing Manual, and the Paradox Sports Handbook.
- The following PowerPoint Presentation has been adapted in part from the Masters Project document
- The following presentation breaks staff training down into three phases and includes videos of each system set-up.



Course Navigation

- There are two ways to navigate through this training manual:
 1. Slide by slide – best for reviewing the entire course
 2. Reference style – using the index on the next slide you can navigate directly to the information you are looking for



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[Phase 1](#)

- [Etiquette](#)
- [Assessment](#)

[Phase 2](#)

- [Giving Beta](#)
- [Side Climbing](#)
- [Power Belaying](#)
- [1:1 Basic Ascending](#)
- [1:1 Redirect Mechanical Advantage System](#)
- [2:1 Mechanical Advantage System](#)
- [3:1 Mechanical Advantage System](#)
- [4:1 Mechanical Advantage System](#)

[Phase 3](#)

- [Risk Management](#)
- [Side-to-Side System Check](#)

[Phase 4](#)

[Conclusion](#)





STAFF TRAINING PHASE ONE

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Staff Training Phase One

- This phase of the training covers adaptive climbing etiquette and assessment.
- Etiquette is just as important as the set up and proper use of the mechanical advantage systems because it helps staff members and participants develop rapport and an effective working relationship.
- An assessment or intake form is an important document for staff members to be able to understand their participants wants, needs, and goals for adaptive and inclusive rock climbing. In attempts to ensure that the participants are perceiving benefits and are making strides towards their goals of participation.



Staff Training Phase One: Etiquette

- Staff members should be able to build rapport
- Adaptive climbing participants are in-tune with their bodies ASK them questions that are pertinent to their climbing goals and the setup of a mechanical advantage system (if one is deemed necessary)
- Ask questions about mobility, functionality, individual goals
- Individual goals should be specific, measurable, attainable, realistic and timely.
- Individual goals should focus on empowerment and problem-solving.
- Work collaboratively - The staff member and the participant should be able to talk to each other and use ideas to reach a common goal.

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Staff Training Phase One: Assessment

- Assessment should include an individual's contact information, emergency contact information, their specific functional difference, mobility assistive devices used, allergies, height and weight, and how the individual heard about the program.

Participant Intake Form

Date: _____

Please Print Clearly

Contact Information:

First Name	Last Name	Gender M / F / Other	Date of Birth / /
Mailing Street Address		Apartment or Suite	
Home Phone		Mobile Phone	
Email(s)			

Emergency Contact Information:

First Name	Last Name	Relationship
Primary Phone(s)	Email	



Participant and Program Information:

Functional Difference(s) (circle all that apply)			
Spinal Cord Injury Location:	MS/MD/Muscle Disorder	Leg Amputee	Visual Impairment:
Spina Bifida	PTSD	Arm Amputee	Total or Partial
Cerebral Palsy	TBI/Stroke	Multiple Amputee:	Other: _____
		Hearing Impairment	
Mobility/Assistive Devices			
Ambulatory		AFO/leg Braces	
Manual Wheelchair:	Full-Time	Part-Time	Walker
Power Wheelchair:	Full-Time	Part-Time	Cane
Crutches			Other: _____
Level of Knowledge: (i.e., beginner, expert)			
Level of Ability: (i.e., limited upper body strength, good upper body strength)			
Program Goals:			
Participant Needs: (i.e., equipment, services, interpreters, support)			
Other Pertinent Information:			

Allergies:			
Medications:			
Height:	Weight:	Age:	Today's Program:
How did you hear about this program? (i.e., website, flyer, etc.)			

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STAFF TRAINING PHASE TWO

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Staff Training Phase Two

- For the purposes of this section, most of the materials will be supplemental videos added for increased support and for ease of understanding.
 - OP should consider building MA systems and storing them fully elongated and set up behind the wall. This would allow for fewer individuals to need to build systems and decrease the risks associated with building these systems.
 - These systems will need to be regularly inspected
 - In this section there will be multiple videos added that go over the set-up of each individual MA system from 1:1 all the way to 5:1



Giving Beta

- Giving beta to participants can be incredibly important depending on the participants goals and needs.
 - Giving beta will depend on the functional differences as it requires the staff or individual giving beta to learn to see and understand body movement on the wall.
 - Giving beta in an adaptive setting is similar to a coaching process.
- Giving the participant beta will allow for the belayer or a side climber to tell the participant the upcoming movement, body placement, or next hand/foot hold(s) necessary to continue making their way up the wall.
 - This information given must take into account the participants goals, range of motion, strength, and any other functional differences; as all participants are different giving beta must be done on a case-by-case basis in order to be successful.

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Side Climbing

- Side climbing is useful because the participant now has direct support, and an individual up there with them who can provide feedback, encouragement and physical assistance as needed.
 - These other support individuals can assist the participant in hand or foot placements if strength or range of motion are an issue, these support individuals can also give beta and provide encouragement to the participant as they make their way up the wall or the rope.
- Side climbers are meant to stay at the same level or a lower level than the participant to provide assistance and encouragement to the participant.

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Power Belaying

- This assisted belaying technique that typically relies on the belayer to use their body weight, an ascender, and sandbags to help assist a participant up the wall.
 - When beginning their power belay, the belayer will likely stand up on their toes and then sink or squat down with the rope to pull out as much slack as possible while maintaining rope tension and braking; if using an ascender, the belayer will also lift their hand over their head to pull a greater amount of rope/slack out of the system.
- By using these techniques and equipment the belayer will keep constant tension on the rope.
 - It is also important to note that this method should only be used with an assisted braking device.

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1:1 Basic Ascending

- This system is NOT a mechanical advantage system
- This system can be set up for basic ascension of a single rope.



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1:1 Redirect Mechanical Advantage System

- To build this system, you will also want to refer to the Paradox Sports Adaptive Climbing Manual and Handbook
- This system requires the following equipment: two locking carabiners, motion-capture pulley, rope that is at least double the height of the wall, and a handlebar ascender.



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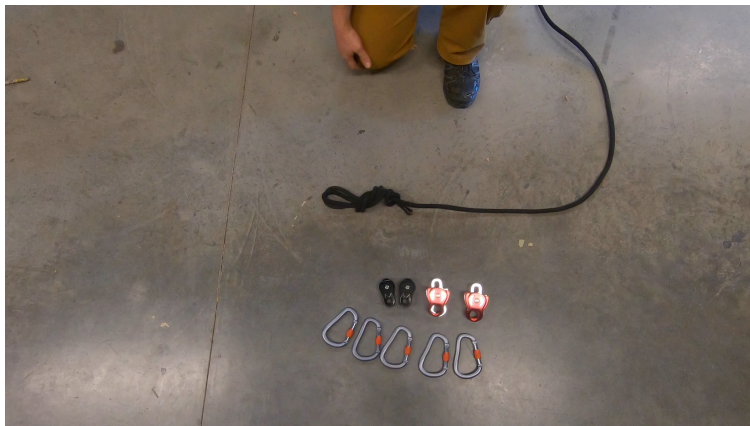
2:1 Mechanical Advantage System

- To build this system, you will also want to refer to the Paradox Sports Adaptive Climbing Manual and Handbook
- This system requires the following equipment: Three locking carabiners, single pulley, progressive capture pulley, and an ascender.



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2:1 Mechanical Advantage System Video



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Cortland^{SUNY}

3:1 Mechanical Advantage System

- In order to build this system, you will also want to refer to the Paradox Sports Adaptive Climbing Manual and Handbook
- This system requires: Three locking carabiners, double pulley, progressive capture pulley, ascender, and rope four times the height of the wall.



The logo for SUNY Cortland, featuring the word "Cortland" in a red serif font with "SUNY" in a smaller, black sans-serif font above it.

3:1 Mechanical Advantage System Video



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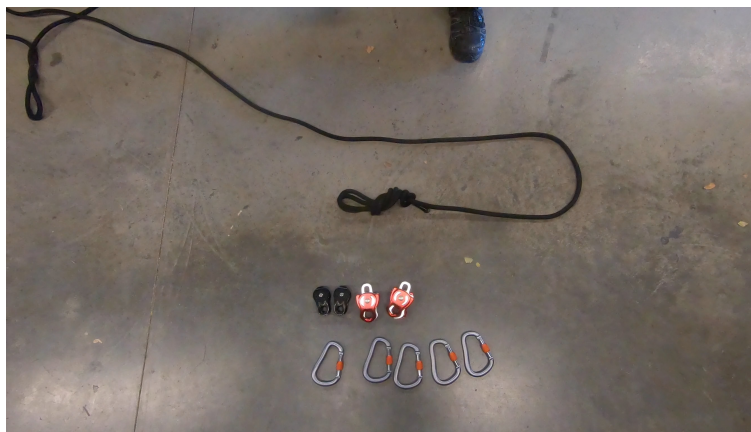
4:1 Mechanical Advantage System

- To build this system, you will also want to refer to the Paradox Sports Adaptive Climbing Manual and Handbook
- This system requires: Three locking carabiners, double pulley, progressive capture pulley, ascender, and rope four times the height of the wall.



The logo for SUNY Cortland, featuring the word "Cortland" in a red serif font with "SUNY" in a smaller, black sans-serif font above it.

4:1 Mechanical Advantage System Video



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STAFF TRAINING PHASE THREE

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Staff Training Phase Three

This phase of the training includes the steps necessary to ensure the proper set up and checks required prior to using the adaptive equipment. This includes risk management and side-to-side-system checks.



Staff Training Phase Three: Risk Management

- Managing and mitigating risk is of the utmost importance when working. This becomes increasingly more important with the increasingly complexity of adaptive systems.
- Systems need to be organized, well-managed, fully understood and rigged properly
- Systems should be properly inspected prior to and after each individual use
- Human factors should also be considered

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Staff Training Phase Three: Side-to-Side System Check

- This is the final piece that staff does before belaying a participant.
- This system check ensures that the system is set up and engaged properly.
- This includes ensuring that all pulleys are loaded correctly, carabiners are locked, camming devices are engaged, belay devices are loaded correctly, the participant is comfortable, and that the ascender is attached to the rope.

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STAFF TRAINING PHASE FOUR

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Staff Training Phase Four: Developing and Training and Assessment Criteria

This final phase of the training is to be developed by the SUNY Cortland Outdoor Pursuits Assistant Director. This phase of the staff training is to include the necessary steps to ensure that all staff are trained properly and that there is an assessment protocol in place. This includes risk management by the OP Assistant Director to ensure that they feel as though they are confident in building each adaptive system as well as their staff being able to build each system, assessment/comprehension checks, and a regular training schedule.

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Staff Training Phase Four: Developing and Training and Assessment Criteria

This phase of the training should also include practice clinics held by OP every three months beginning in August, November, January, and April, as well as assessment and comprehension checks to ensure that all staff are knowledgeable, confident, and competent in providing these skills, building these systems, and providing any other services to participants. These criteria should be dependent on how the program initially institutes these programs and at the discretion of the OP Assistant Director in their professional expertise.

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Conclusion

- Now that you have gone through this training guide, it is your turn.
- Use these materials and adapt your own to assist in staff training and the institution of adaptive climbing services at your facility.

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