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**Institute for Human Development at Northern Arizona University Advancing Assistive
Technology for Learning and Accessibility in Higher Education for Students with I/DD
(ATLAS)**

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To: Marcella Crane - Contracts Manager, Arizona
Developmental Disabilities Planning Council
From: Institute for Human Development at Northern Arizona University
PI: Dr. Kelly D. Roberts
Re: Assistive technology (AT) support draft concept
Title: Advancing Assistive Technology for Learning and Accessibility in Higher
Education for Students with I/DD (ATLAS)

Dear Marcy,

Please see the enclosed proposal for the Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD (ATLAS) project.

If any additional information is needed, please do not hesitate to contact us.

Sincerely,



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Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD (ATLAS) Project

Introduction and Need

Since the passage of federal legislation such as the Americans with Disabilities Act of 1990 and the Individuals with Disabilities Education Act Amendments of 1997, colleges have been required to make “academic adjustments” to provide a more accommodating environment for individuals with disabilities (Stodden, 2005; Raskind & Higgins, 1998). This has led to a significant increase in the number of individuals with disabilities in higher education; since 1985, the percentage of first-time, full-time college freshmen who reported having a disability doubled from 15% to 32% (HEALTH Resource Center, n.d.).

Of all the accommodations provided by institutions of higher education to individuals with disabilities (such as note takers, test taking modifications, and tutors), assistive technology (AT) is one of the most promising means of creating an equitable educational environment. Historically, AT consisted of basic devices such as tape recorders, word processors, and listening aids (Raskind & Higgins, 1998). In recent decades this has expanded to include such advanced technology as picture-based software, text-to-speech apps, and predictive text artificial intelligence (Weil, 2023; Bouck, Long, & Jakubow, 2023). Decades of research indicate that successful AT use helps improve academic engagement, motivation, autonomy, and employment prospects for students with disabilities (Bouck & Flanagan, 2015; McNicholl et al., 2021).

Despite the increase in the numbers of college students with disabilities using AT, and its demonstrable benefits, there is limited data on its effectiveness for this population. Most research on the educational uses of AT has concentrated on primary and secondary school students or narrowly focused on a specific disability category (McNicholl et al., 2020; Bouck, 2016). These research findings may not be generalizable to disabled college students due to the different challenges they face, such as independent living and self-advocacy. The evidence is even more limited for “high-incidence disabilities” such as learning disabilities, intellectual and developmental disabilities (I/DD), and autism spectrum disorder, even though this population represents about 70% of disabled students and is increasing (Satterfield, 2020).

College students with disabilities considered “severe,” such as I/DD and autism, are less likely to utilize AT (Kowalewski & Ariza, 2022; Bouck & Long, 2021). In a survey of literature on AT use in postsecondary education from 2009 to 2020, Fernández-Batanero (2022) found AT was used mainly by visually impaired students (25%), followed by hearing impaired students (21.43%) and physically impaired students (14.29%). AT is much less likely to be utilized by students with autism (10.71%), intellectual disabilities (7.14%) or behavioral disorders (3.57%). The greater AT use among deaf/hard of hearing and visually impaired students might be attributed to the more established provision of accommodations to these groups (e.g., braille notetakers and use of American Sign Language) and, as a result, greater familiarity among school faculty and staff with appropriate types of accommodations (Blouck & Flanagan, 2015).

The lower use of AT in postsecondary education by individuals with I/DD and other severe disabilities is particularly concerning due to the difficulties that have historically been faced by this population. Evidence suggests that individuals with severe disabilities have significantly

lower levels of enrollment in higher education, higher rates of unemployment, and lower rates of independent living compared to other students with disabilities, as well as significant challenges with literacy and mathematics (Satterfield, 2020; Bouck & Flanagan, 2015). Even students who utilized AT in high school often do not use it in postsecondary education or employment. This may be due, in part, to challenges transitioning from secondary schools – where school staff are responsible for facilitating the use of AT – to postsecondary education and employment in which the individual is responsible for self-advocacy and seeking out funding sources such as private insurance, Medicare, and vocational rehabilitation (Bouck & Flanagan, 2015).

In short, students with disabilities are entering higher education and utilizing assistive technology more than ever. However, students with severe disabilities such as I/DD and autism utilize AT at lower rates than students with other disabilities, despite the significant challenges they face. The remainder of this section will describe the greatest barriers to AT use by individuals with severe disabilities and how they will be addressed by the proposed project.

1. *Cost of AT devices and maintenance.* One of the most commonly cited barriers to accessing assistive technology is its cost, including both the initial purchase of the device as well as repair and upkeep (Satterfield, 2020; Alper & Raharinirina, 2006; Bouck & Flanagan, 2015; Fernández-Batanero et al., 2022). While many individuals are eligible for assistance through state Assistive Technology Act programs, vocational rehabilitation, and other sources of support, they may not be aware of or know how to access these services.
2. *Lack of information and training.* In addition to lacking knowledge of funding sources for AT, many individuals with disabilities and their families lack information about available AT for their disabilities (Satterfield, 2020; Alper & Raharinirina, 2006). Moreover, sometimes the complexity of the AT device is a hindrance, particularly when the student is not trained in its use. If memory or cognition challenges make it difficult to operate the AT device, it may be abandoned (McNicholl et al., 2021; Bouck and Flanagan, 2015).
3. *Lack of professional knowledge and training.* Lack of knowledge about AT on the part of professionals, such as administrators, disability resource offices, and other school staff, poses a major obstacle to access (Alper & Raharinirina, 2006; Fernandez-Batanero et al., 2022; McNicholl, 2019).
4. *Stigma and negative attitudes among peers and teachers.* Partially as a consequence of the lack of knowledge about disabilities and accommodations among teachers and peers, some students report experiencing stigma and negative attitudes associated with AT use (Satterfield, 2020; Alper & Raharinirina, 2006). Studies have found that if a sense of belongingness is lacking during the initial eight weeks of beginning college, there is a significant risk of dropping out (Shaewitz & Crandall, 2020). In general, the incidence of withdrawal among students with disabilities is comparatively high, with 25% dropping out by the conclusion of the first year and 35% by the end of year two (Kowalewski & Ariza, 2022). This points to the great importance of facilitating a culture in higher education that supports inclusion and diversity.

The Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD (ATLAS) project will address the aforementioned barriers in a number of ways. It focuses on students in the Supporting Inclusive Practices in Colleges (SIP-C) program, established at Northern Arizona University's Institute for Human Development (IHD) in 2020 to

support individuals with intellectual and developmental disabilities (I/DD) as they pursue their self-determined educational goals. We will recruit a minimum of 10 SIP-C participants to participate in this project. The proposed project includes the following features:

1. *Conducting guided interviews with participants to obtain a greater knowledge of needs and barriers in postsecondary education.* As indicated above, there is a dearth of current evidence on the AT use of students with severe disabilities in higher education. Kowalewski and Ariza (2022) recommend the use of institutional surveys of students with disabilities, focusing on their academic engagement and social life. We will develop and administer guided interview questionnaire, informed by Dr. Joy Zabala's "Student, Environments, Tasks, Tools" (SETT) framework, to initiate individualized discussions with project participants to identify needs and limitations that could be improved through the use of AT. We will also explore participants' current and past AT use. We will then use this information to work directly with participants to address their AT needs and support them in self-advocating to obtain needed AT. Throughout the proposed project, changes in overall independence of participants will be assessed, with the hypothesis being that individuals with I/DD in higher education will see improvements in academic performance and self-determination, thus becoming more independent as a result of accessing and utilizing AT.
2. *Providing resources and training to disability resource offices (DROs) and other campus supports.* As noted above, a major obstacle to AT use cited by students with I/DD is lack of knowledge among faculty and other university staff. ATLAS will draw upon the shared experiences of participants to create comprehensive training opportunities to encourage DROs and other student-supporting entities to work with students to facilitate access to AT and other accommodations. We will also reinforce the connection between these entities and project participants to ensure that participants are equipped to obtain permanent AT to incorporate in all aspects of their lives. This approach, in collaboration with university and public resources, may mitigate some of the financial and logistic barriers to AT acquisition.
3. *Providing support to facilitate use of AT.* One of the obstacles to AT utilization by individuals with I/DD is abandonment of the devices due to excessive complexity or difficulty of use and maintenance. The proposed project model uses a tiered approach to providing support to facilitate the use of AT. First, project staff and SIP-C support staff will undergo extensive training to understand the fundamental principles and functions of AT, the project objectives, and expectations for evaluation and assessment. Second, project participants will work with staff to develop individualized plans of action (IPOA) that will include opportunities for participants to experience, test, and try out AT. When participants are successfully matched to the appropriate AT, they will receive ongoing support from the project assistive technology specialist (ATS), who will demonstrate proper usage, basic maintenance, and troubleshooting strategies that the participants can perform themselves. Finally, the project will collaborate with the Arizona Technology Access Program (AzTAP), a statewide program housed at IHD that provides assistive technology to individuals and their families, enhancing the existing support structure. This comprehensive approach to training, educating, and assisting ensures continuity and consistency in the level of support project participants will receive to integrate AT successfully.

By supporting individuals with I/DD in overcoming barriers to AT use, ATLAS aligns with the Arizona Developmental Disabilities Planning Council (ADDPC) Plan (2022). Specifically, this project will increase the self-determination (Goal 1) of participants with I/DD by promoting inclusion with engagement (Goal 3) and assisting with system access and navigation (Goal 5). Success in postsecondary education will lead to more individuals with I/DD obtaining meaningful careers (Goal 2).

Scope of Work

The ATLAS project is designed to facilitate the success of individuals with I/DD in higher education (PSE) through the utilization of assistive technology (AT). The SETT framework designed by Dr. Joy Zabala, which emphasizes a multi-faceted approach to matching students' strengths, environments, and tasks to their available AT options, will be adapted to a postsecondary context and implemented as the guiding model for this project. As indicated, the efficacy of AT to improve academic performance, motivation, autonomy, and career opportunities has been supported by decades of extensive research (Bouck & Flanagan, 2015; McNicholl et al., 2021). As Chambers and Forlin (2020) note, "AT is just a means to participate in activities which offer the opportunity to built knowledge and skills" (p. 26). However, there is still a lack of understanding of the ways in which AT can benefit students with I/DD who are transitioning to, or participating in, postsecondary education. ATLAS represents an intentional effort to bridge the gap between limitation and accessibility by leveraging the use of AT to create supportive environments for the target population.

The proposed project seeks to increase awareness about the benefits of AT use as a way to improve academic performance and self-determination. The project objectives and activities are aligned with this aim. Encompassed in the project model is personalized engagement with participants to help them identify and articulate their needs and limitations. Project participants will (i) access and test several types of AT (low-, medium-, and high-tech), (ii) learn AT fundamentals related to maintaining and troubleshooting, and (iii) be supported to incorporate the use of their need-specific AT in a PSE setting. Project staff will assist participants in exploring local, state, and federal resources that can help them obtain permanent AT to use in postsecondary education and other aspects of their daily lives, thereby moving closer to attaining independence.

At the core of ATLAS are clear and actionable objectives. Foremost, the project aims to provide extensive training on the use and benefits to project staff, support staff, DROs, and student-serving entities on the benefits of AT in postsecondary education. These training opportunities will also create a path for sustainability by empowering individuals who work directly with students with I/DD with the knowledge and skills necessary to effectively introduce the utilization of AT to improve academic performance and self-determination. The ATLAS project posits that individuals with I/DD who are able to improve their academic performance and increase their self-determination will, ultimately, be more independent in all areas of their lives. Through strategic interventions and support mechanisms informed by evidence-informed practices from the existing SIP-C program, ATLAS will cultivate an inclusive postsecondary education experience that is conducive to growth and development. The overarching goal of ATLAS is to *empower individuals with I/DD to utilize AT effectively as a tool for accessing and*

succeeding in postsecondary education, thereby enhancing academic performance, fostering self-determination, and ultimately leading to greater overall independence.

Central to the success of ATLAS is its commitment to individualized support. The project will introduce guided discussions and opportunities to experience AT via the development and implementation of participants' individualized plans of action (IPOAs). The IPOA will allow participants to develop awareness of their needs and limitations, specifically those that are barriers to their self-determination and academic performance. Project staff and support staff will work collaboratively to tailor plans for testing, maintaining, and obtaining AT that meets the unique needs and preferences of each participant. Through personalized IPOAs and ongoing assessment mechanisms, ATLAS seeks to empower participants with I/DD to take ownership of their educational journey, thereby facilitating meaningful progress towards their academic and personal goals. All project objectives and corresponding activities aim to increase overall independence through PSE credentials, which can open doors to adult living and gainful employment.

Project Site Locations

SIP-C's service area covers approximately 53,000 square miles and includes parts of the Navajo Nation and many other rural areas throughout northern Arizona. For this project, we will utilize existing partnered site locations to (1) recruit participants, (2) provide in-person project specific support, and (3) offer localized trainings for faculty, staff, service providers, and community members. As indicated, SIP-C collaborates with local educational agencies (LEAs) including Yuma School District, Red Mesa Unified School District, and Kingman Unified School District. To implement the project successfully in rural areas or in historically under/unserved populations, we anticipate offering services and supports at one or more of the following sites:

High Schools

- Red Mesa Unified School District, Teec Nos Pas, AZ
- Kingman Unified School District, Kingman, AZ
- Yuma School District, Yuma, AZ

Colleges or Universities:

- Northern Arizona University, Flagstaff, AZ
- Coconino Community College, Flagstaff, AZ
- Mohave Community College, Kingman/Bullhead City, AZ
- Northland Pioneer College, Show Low, AZ

Project Goal: Empower individuals with I/DD to utilize AT effectively as a tool for accessing and succeeding in postsecondary education, thereby enhancing academic performance, fostering self-determination, and ultimately leading to greater overall independence.

Acronym Guide

- AT: Assistive Technology
- ATS: Assistive Technology Specialist
- AzTAP: Arizona Technology Access Program
- Co-PI: Co-Principal Investigator
- DRO: Disability Resource Office
- EV: Evaluator
- I/DD: Intellectual and Developmental Disability
- IPOA: Individualized Plan of Action
- IHD: Institute for Human Development
- PI: Principal Investigator
- PM: Project Manager
- PS: Project Staff
- PSE: Postsecondary Education
- SS: SIP-C Support Staff

Figure 1 provides a visual overview of the entire project and includes the following objectives.

Objective 1. Prepare ATLAS project staff (PS) and SIP-C support staff (SS) to implement the project and achieve the intended outcomes. Timeline: Months 1-2

Act 1.1. Create training materials and define learning outcomes for PS and SS. Timeline: Month 1 (PI, Co-PI, EV, PM, ATS)

Act. 1.2. Provide SS with training on AT developed in Act. 1.1, to include assessing if a new or current SIP-C participant would benefit from AT. Timeline: Month 1 (EV, ATS, PM, SS)

Act. 1.3. Train SS on the basics of setting up, using, and troubleshooting AT (low to high-tech). Timeline: Month 1 (EV, ATS, PM, SS)

Act. 1.4. Explain intended outcomes and evaluation to SS, specifically the usage of the coaching questionnaire created in Act. 1.6 required to record independence indicators in the SIP-C Data Collection Reporting and Analysis (DCARS) system. Timeline: Month 1 (EV, ATS, P M, SS)

Act. 1.5. Formalize the connection between PS, SS, and Arizona Technology Access Program (AzTAP) staff to include standardized processes for initiating referrals or obtaining additional training for specific AT. Timeline: Months 1-2 (ATS, PM, SS)

Act. 1.6. Design a questionnaire for SS to record indicators related to overall independence. SS will utilize the questionnaire during typical coaching sessions for the duration of this project. Timeline: Month 2 and periodically (PI, Co-PI, EV, PM, SS)

Outcome: Project and support staff are trained to implement the project and utilize project evaluation materials to achieve intended outcomes.

Objective 2. Identify participants for the ATLAS project. Timeline: Month 2

Act. 2.1. Collaborate with SS to identify a minimum of 10 current or new SIP-C participants who may benefit from the use of AT in their PSE setting. *Note: Not all current or new SIP-C participants are likely to report they experience impeded access to, or success in, PSE; therefore, not all current or new SIP-C participants are likely to benefit from the ATLAS project.*
Timeline: Month 2 (Co-PI, PM, SS)

Act. 2.2. Obtain permission to share potential participants' information with the ATLAS assistive technology specialist (ATS). Timeline: Month 2 (SS, PM)

Act. 2.3. Obtain consent from selected individuals to participate in the ATLAS project from the individuals identified under activity 2.1. Timeline: Month 2 (PM, ATS)

Outcome: A minimum of 10 current or new SIP-C participants are identified and consent to participate in the project.

Objective 3. Assess participants' AT needs. Timeline: Months 2-3

Act 3.1. Create a guided questionnaire informed by the SETT Framework and conduct guided discussions with ATLAS participants to determine:

- a. needs or limitations impeding academic performance;
- b. needs or limitations impeding self-determination; and
- c. current and past AT use. Timeline: Month 2 (PI, Co-PI, EV, ATS)

Act. 3.2. Analyze data from Act. 3.1 to determine needs or limitation baselines specific to academic performance and self-determination. Timeline: Month 2 (EV)

Act. 3.3. Meet with each participant to review the results of their guided discussions to determine needs or limitations they want to address through the use of AT. Timeline: Month 3 (ATS, SS)

Outcome: ATLAS participants participate in guided discussions to determine baseline needs and limitations specific to academic performance and self-determination.

Objective 4. Support ATLAS participants to access and use AT specific to their needs or limitations and preferences identified under Objective 3. Timeline: Month 3; Ongoing.

Act. 4.1. Compile a list of the most common needs or limitations of participants as determined by baseline data from Act 3.2. Timeline: Month 3 (EV, ATS)

Act 4.2. Coordinate with AzTAP to identify various forms of AT (low to high-tech) that can be used to effectively address the needs or limitations of participants as determined by baseline data from Act. 3.2. Timeline: Month 3 (ATS, PM, SS, AzTAP)

Act 4.3. Expose participants to a broad range of AT that has the potential to address their needs or limitations by providing opportunities for participants to experience and test AT identified in Act. 4.1. Timeline: Months 3-4 (ATS, PM, SS, AzTAP)

Examples of opportunities for participants include:

- a. viewing virtual demonstrations from AzTAP covering low to high-tech AT;
- b. traveling to AzTAP in Phoenix to see different forms of AT and engage in hands-on AT trials;
- c. working on a one-on-one basis with ATS to learn about different types of AT on the manufacturers' websites; and
- d. attending AT demonstration events hosted by SS and SIP-C peer mentors at institutions of higher education.

Act 4.4. Develop an individualized plan of action (IPOA) for ATLAS participants. Timeline: Months 4-5 (ATS, SS)

IPOAs: Modeling evidenced-based best practices for person-centered planning and coaching, the IPOA is expected to evolve the longer the participant utilizes AT in various settings in and outside of the PSE environment. The participants, ATS, and SS will engage in discussion, identify and set goals, collaborate to share relevant information, and remove or introduce AT based upon participant's response to the initially recommended AT. While the initial IPOA will include a recommendation for AT that may address the identified needs and limitations of each participant, the finalized IPOA may recommend different or complimentary AT.

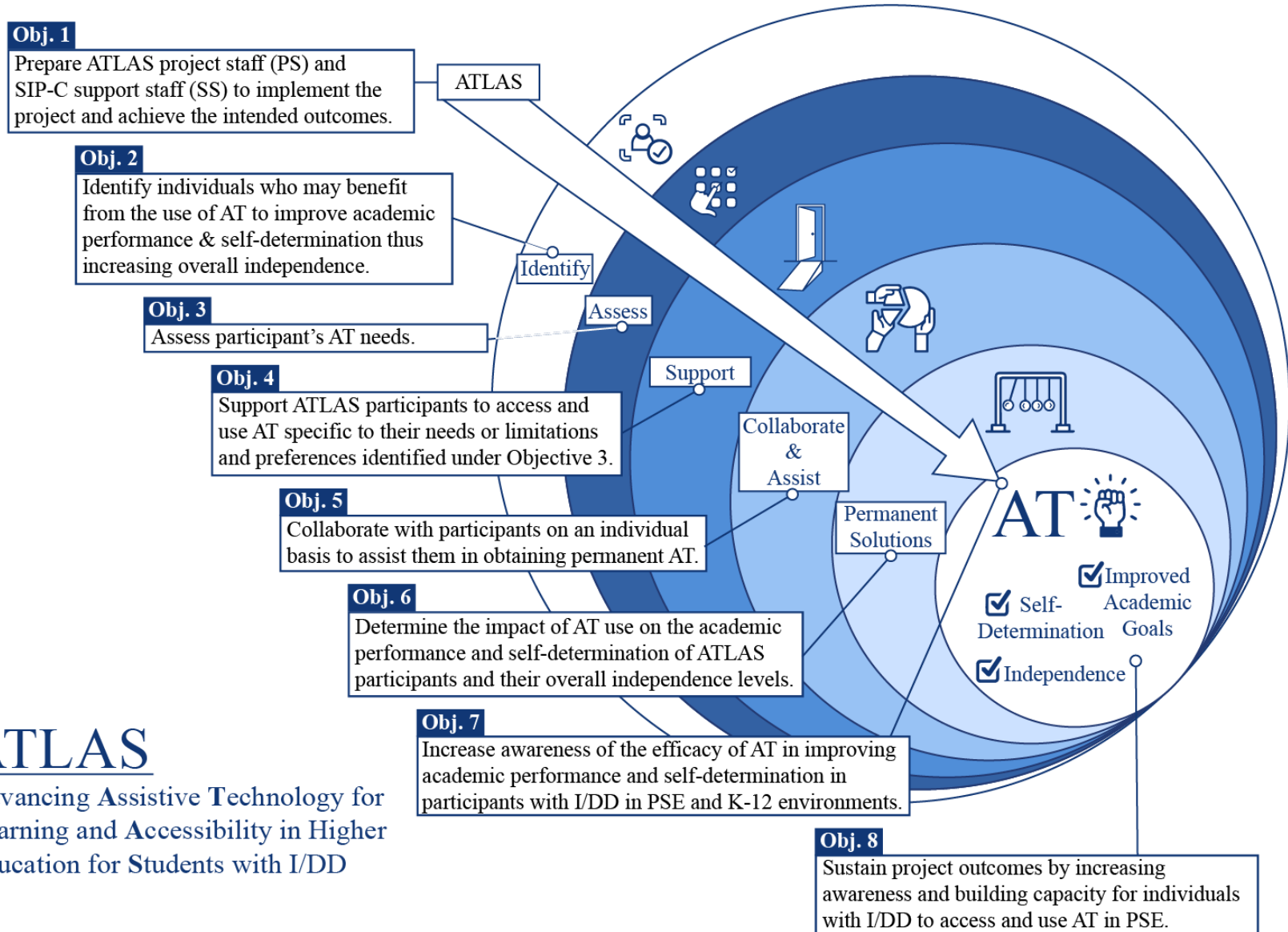
The IPOA will build upon the participants' engagement in objectives 2 through 4.

Act. 4.5. Lend the recommended AT to each participant and support all aspects of its use, including installation and training. Timeline: Month 5; Ongoing (ATS, PM, SS, AzTAP)

Examples include:

- a. If a participant has one clear need or limitation that can be addressed by one type of AT (e.g., a person who cannot read needs software that can read course content to them), various brands of AT can be loaned to the participant from AzTAP (e.g., read-aloud, Kurzweil).
- b. If a participant has low-tech needs (e.g., a shoehorn to use so they can get their shoes on and get to class on time), options will be provided for trial and loaned to the participant from AzTAP.
- c. If a participant requires assistance with typing due to limited use of one or both hands, they can try out various types of AT, such as modified keyboards, loaned to them by AzTAP.

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ATLAS

Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD

Act. 4.6. Update, revise, or modify participants' IPOA based upon staff observation and participant self-assessment of how effective the recommended AT is assisting them to improve their academic performance and self-determination. Timeline: Month 5; Ongoing (PI, Co-PI, EV, ATS, SS, AzTAP)

Outcome: ATLAS participants are supported to experience and test AT to develop their IPOA and incorporate the usage of AT in PSE environments through iterative processes.

Objective 5. Collaborate with participants on an individual basis to assist them in obtaining permanent AT. Timeline: Month 6; Ongoing

Act. 5.1. Assist participants who are eligible for vocational rehabilitation services to self-advocate by starting the process with vocational rehabilitation to obtain AT that has been integrated successfully. Timeline: Month 6; Ongoing (ATS, PM, SS)

Act. 5.2. Assist participants who are eligible for campus disability resource services to self-advocate by starting the process with their disability resource office (DRO) to obtain AT that has been integrated successfully. Timeline: Month 6; Ongoing (ATS, PM, SS)

Act. 5.3. Locate and/or obtain free AT for participants (recycled, repurposed, donated, etc.). Timeline: Month 6; Ongoing (ATS, PM, SS, AzTAP)

Outcome: ATLAS participants obtain permanent AT.

Objective 6: Determine the impact of AT use on the academic performance and self-determination of ATLAS participants and their overall independence levels. Timeline: Month 2 (baseline); Months 7-10

Act. 6.1. Design a final stage guided questionnaire to elicit feedback on the experience of using AT to access and succeed in PSE. Timeline: Month 7 (PI, Co-PI, EV, ATS)

Act. 6.2. Conduct individualized final-stage guided discussions with participants to elicit qualitative feedback on the experience of using AT in a PSE setting. Timeline: Month 8-9 (EV, ATS)

Act. 6.3. Complete a comparative analysis of initial and final stage findings from guided discussions and DCARS reports as detailed under the [evaluation plan](#). Timeline: Month 9 (PI, Co-PI, EV)

Act. 6.4. Utilize evaluation findings to develop training materials to increase awareness of the benefits of AT in PSE for participants with I/DD. Trainings will be offered to DROs and/or related student-serving entities who are partnered with the SIP-C program. Timeline: Months 9-10 (PI, Co-PI, EV, ATS)

Act. 6.5. Design feedback surveys or questionnaires to collect feedback data from individuals attending professional trainings indicated in Act. 7.1. Timeline: Month 10 (PI, Co-PI, EV)

Outcome: Impacts of AT as a means to access PSE and improve academic performance and self-determination for project participants is demonstrated; overall independence in project participants is increased.

Objective 7: Increase awareness of the efficacy of AT in improving academic performance and self-determination in participants with I/DD in PSE and K-12 environments. Timeline: Months 4-12

Act. 7.1. Prepare materials and complete professional development (PD) trainings for DRO and postsecondary education student-serving entities. Timeline: Months 10-11 (Co-PI, ATS, PM, SS)

Act. 7.2. Prepare materials and complete professional development and information sessions to inform teachers and staff of local educational agencies (LEAs) about the benefits of AT including evidence in support of using AT in K-12 classrooms. Months 4-12 (Co-PI, ATS, PM, SS)

Act. 7.3. Provide demonstrations to a minimum of four high schools illustrating the academic benefits of AT. Months 4-12 (Co-PI, ATS, PM, SS)

Act. 7.4. Analyze qualitative and/or quantitative data collected from PD and demonstration attendees to identify, design, and incorporate informed revisions to training materials for future use. Timeline: Months 4-12 (PI, Co-PI, EV, ATS)

Outcome: DROs, student serving campus entities, and K-12 teachers and staff have increased awareness of the benefits of AT in PSE and K-12 environments as related to improving academic performance, self-determination, and overall independence of individuals with I/DD.

Objective 8: Sustain project outcomes by increasing awareness and building capacity for individuals with I/DD to access and use AT in PSE. Timeline: Month 11; Ongoing

Act. 8.1. SS participate in trainings offered to DROs and student-serving entities to increase SS understanding of AT in PSE environments and reinforce existing partnerships. Timeline: Months 11-12 (Co-PI, PM, SS)

Act. 8.2. SS continue the use of the guided discussion and coaching questionnaire tools to ensure the AT needs of current and new SIP-C participants are assessed and participants are supported to access relevant AT. Timeline: Ongoing (PM, SS)

Act. 8.3. Offer ongoing trainings to additional DROs, student-serving entities, service providers, and community members; secure opportunities to present on project outcomes at appropriate venues. Timeline: Ongoing (Co-PI, PM, SS)

Outcome: Project outcomes are disseminated, resulting in sustained awareness and capacity building.

Evaluation

All evaluation activities will be conducted in accordance with the recommendations of the Joint Committee on Standards for Educational Evaluation and are informed by the guidelines of Universal Design for Evaluation (Yarbrough et al., 2010), established by the Disabilities and Other Vulnerable Populations Topical Interest Group of the American Evaluation Association (Sulewski & Gothberg, 2013).

A combination of tools will be used to evaluate project outcomes, including formative/summative assessments, semi-structured interviews, surveys, notes/observations, and student surveys. When taking this approach, the result is a combination of perceptual data, observation data, and outcome data. Additionally, these data include a rich description of practice as well as quantifiable outcomes important to tracking growth over time.

Objective 1: Training for ATLAS PS and SIP-C Support Staff

Backwards course design is a strategy of designing trainings by starting with an end goal for trainees (often called a learning outcome or LO) and subsequently working backwards to summative assessment, in-training content or activities, out-of-training or pre-training content and formative assessment (Wiggins & McTighe, 1998). Backwards course design often dovetails with universal design for learning (UDL) strategies, aligns with adult learning theories, and has been applied to academic coaching models to improve outcomes for participants with disabilities (Mitchell & Gasemer-Topf, 2016).

Measures, Data Collection, and Analysis

SIP-C support staff (SS) training will occur early in the project, to establish a baseline understanding of AT and ensure staff are prepared to support participants in achieving the intended learning outcomes. Learning outcomes will utilize Bloom's taxonomic hierarchy. While other learning taxonomies have been established, Bloom's structure remains one of the most used and refined, with language that aligns to assessments with room for flexibility in interpretation (Stanny, 2016). The EV will collaborate with the assistive technology specialist (ATS), program manager (PM), and SS to determine appropriate LOs for training, guided by the activities in Objective 1. Examples of possible LOs include:

- LO #1: Identify the different types of AT (low-tech, medium-tech, high-tech) that are available to participants with I/DD.
- LO #2: List three to five of the most common AT devices used by participants with I/DD.
- LO #3: List three possible questions to ask participants to assess if an AT evaluation would be appropriate.
- LO #4: Evaluate available student information (self-reports, application/intake form, IEP/504 plans) to determine if an AT evaluation would be appropriate.
- LO #5: Describe the process for referring a student for AT evaluation.

Summative assessments will be aligned to the learning outcomes. For example, learning outcomes which emphasize recalling or identifying information can be accomplished with multiple choice questions, while learning outcomes which emphasize critical thinking or applying concepts can best be captured in short descriptive responses. The evaluator (EV) will develop a short summative assessment to determine current SS knowledge of AT prior to the training. The ATS, PM, and SS will determine appropriate training content and activities and the training materials will be reviewed by the EV for adherence to UDL and backward design principles. After the training is carried out by ATS, PM, and EV, the EV will ask SS to complete a summative assessment that aligns with the predetermined LOs. Examples of summative assessments, which will be administered immediately following the trainings, could include:

- LO: Identify the different types of AT (low-tech, medium-tech, high-tech) which are available to participants with I/DD.
 - Possible Summative Assessment: Short quiz - “Which of the following is a type of low-tech assistive technology? (A) A solar powered wheelchair (B) Dragon screen reader technology (C) A phone calendar, (D) A paper and pencil planner”
- LO: Evaluate available student information (self-reports, application/intake form, IEP/504 plans) to determine if an AT evaluation would be appropriate.
 - Possible Summative Assessment: Short answer - “What could you use to determine if you should refer a student to AzTAP for an AT evaluation? List at least three types of information.”
- LO: List three possible questions to ask students to assess if an AT evaluation would be appropriate.
 - Possible Summative Assessment: Self-reflection – “What are three questions you could ask a student with I/DD to determine if they’re a good candidate for an AT evaluation?”
- LO: Describe the process for referring a student for an AT evaluation.
 - Possible Summative Assessment: Short simulation – “Thomas is a student who self-reports challenges with school. After talking to their school counselor and reviewing their IEP/504 plan with them, you learn they have challenges recalling what the instructor says and struggle to take notes that would help them study for the tests instructors give. Is the student a good candidate for an AT evaluation? Write the email to the AT evaluator – ensure you have the correct email address and the have cc-ed the student.”

To determine if the knowledge from the training is being applied to conversations with project participants, the EV will work with project staff to identify and/or modify existing Data Collection Reporting and Analysis (DCARS) coaching questions to capture coaches’ observations of overall independence of participants, AT needs/use questions, and participant behaviors indicative of improved academic performance and self-determination, as well as increased independence. The EV will evaluate half of the support staff’s notes from their coaching sessions for evidence of applied knowledge from the training each quarter and compare the results from quarter to quarter.

Objectives 3 and 4: Assessing and Analyzing Participants' AT Needs

Developed by Dr. Joy Zabala, the “Student, Environments, Tasks, Tools” (SETT) framework was designed as a guided process for organizing disparate information to help teams collaborate on potential AT solutions for students in K-12 educational environments (Forlin & Chambers, 2020). AT within the SETT context is “just a means to participate in activities which offer the opportunity to build knowledge and skills” (Forlin & Chambers, 2020, p. 26). The SETT framework encourages an approach that centers participants’ strengths, examines environmental factors which may impact AT use, aligns with specific tasks, and considers the possible range of available AT. SETT scaffolds were created to help support collaborative teams in utilizing the SETT framework to determine appropriate AT use (Zabala, 2005; Zabala & Korsten, 2005).

Measures, Data Collection, and Analysis

Validated measures, which can definitively link AT usage to PSE, have not yet been fully realized by scholars, given the variability in type of AT; severity of disability; frequency, duration, and context of AT use; and reliance on non-specialized, broadly available AT, such as electronic calendars or phone apps (McNicholl, Desmond, & Gallagher, 2023). The Psychosocial Impact of Assistive Devices Scale (PIADS) is a validated instrument for AT specific psychosocial measures (Jutai & Day, 2002), but it is not contextualized to PSE nor PSE access and achievement. Thus, our measures for student outcomes will be contextualized to the individual experiences of the ATLAS participants as guided by the SETT framework. Thus, the SETT framework will be adapted into cohesive semi-structured interviews (pre-use and post-use) and a mid-use survey by the EV and ATS. These qualitative methods will explore the participants’ current and past AT use, identify potential barriers to accessing and succeeding in PSE, and encourage participants to articulate a self-determined vision for their PSE access and success.

The pre-use assessment interview has three vital components:

1. The participant’s vision of their PSE access and success is described.
2. Major functions (communication, participation, productivity) or specific tasks (recall, note taking, attendance) that AT could intervene on are targeted are described.
3. The expected impact of AT on PSE access and/or success for the participant is described (improved attendance, classroom engagement/participation, homework outcomes).

Next, a customized mid-use assessment survey will be built for the participant by the EV and refined by the ATS. The mid-use assessment survey will be administered to participants two weeks after the ATS introduces them to an AT intervention. Participants will be asked questions specific to their use of AT, their perceived change in major function or completion of a specific task, and their perception of how their PSE access or success has changed. The results will be aggregated by the EV and reviewed by the ATS. Finally, the participants will complete a post-use semi-structured interview. This interview will again be conducted by the ATS and coded by the EV. The interview will focus in on the student’s use of the AT, its impacts on academic performance, and their perceived levels of self-determination. The interview transcripts will be analyzed for common themes between participants. To verify the evaluation data collected directly from participants, SS coaching notes and DCARS measures will be analyzed throughout the AT intervention. The data for each participant’s pre-use interview and mid-use interview and

the observed data from coach’s notes and DCARS measures will be compared against the post-use interview results to determine the effectiveness of the AT intervention and the observed level of the participant’s improved independence. These results will be synthesized and used to inform trainings with DRO offices, added to quarterly reports, and presented to project leadership.

Objectives 6 and 7: Increase awareness and sustaining project outcomes via trainings for Disability Resource Offices (DRO) and student-serving entities

Findings synthesized from participants’ self-reports and SS observations will be used to inform trainings for DRO offices on the impacts AT can have the improvement of participants with I/DD in PSE environments.

Measures, Data Collection, and Analysis

In collaboration with ATLAS leadership, a single LO will be determined for disability resource offices that participate in webinars or trainings. The impact will be assessed by a short two-question survey on perceived value of the information and confidence of the participant to use the information they have acquired to improve their interactions with participants with I/DD. Links to the survey questionnaire will be included on design slides to gather feedback from any ongoing trainings.

Program Implementation Evaluation

Ongoing evaluation reports will be produced quarterly and annually for both project directors and funders, as indicated in Table 1. Evaluation reports will include a detailed review of project timelines, a synthesis of ongoing measures, and results of completed measures. Quarterly reports on evaluation measures will also be presented to SIP-C staff and project leadership at regular staff meetings. All data visualization will adhere to standards of quality representation of data (Azzam et al., 2013) and standards of accessibility (Versloot et al., 2015).

Note: Objectives and activities with no aligned evaluation measures are not included in the following evaluation table.

Table 1. Evaluation Table

Objectives and Activities	Evaluation Questions	Method or Framework/Data
Objective 1: Prepare ATLAS project staff (PS) and SIP-C support staff (SS) to implement the project and achieve the intended outcomes.		
Act. 1.1. Create training materials and define learning outcomes for PS and SS.	What must SS know about AT to execute the project’s aims and goals? What are SS already doing which could reinforce their training?	Backwards Course Design/ Bloom’s Taxonomies
Act. 1.2. Provide SS with training on AT developed in	What do SS know about AT prior to training?	Formative and Summative Assessments

Act. 1.1, to include assessing if a SIP-C student could benefit from AT.	<p>How does the training impact SS comprehension of AT and its potential to improve outcomes for transitioning participants with I/DD immediately following the training?</p> <p>What long-term impact does the training have on how SS coach participants with I/DD?</p>	
Act. 1.3. Train SS on the basics of setting up, using, and troubleshooting AT (low- to high-tech).		
Act. 1.4. Explain intended outcomes and evaluation to SS, specifically the usage of the coaching questionnaire (Act. 1.6) required to record independence in the SIP-C Data Collection Reporting and Analysis (DCARS) system.		
Act. 1.6. Design a questionnaire for SS to record indicators related to overall independence. SS will utilize the questionnaire during typical coaching sessions for the duration of this project.		

Objective 3. Assess participant’s AT needs.

Act. 3.1. Create a guided questionnaire informed by the SETT Framework and conduct guided discussions with ATLAS participants to determine: (a) needs or limitations impeding academic performance, (b) needs or limitations impeding self-determination, and (c) current and past AT use.	<p>What are the strengths, environments, tasks, and tools for ATLAS participants impacting their access and success in PSE environments?</p> <p>What AT are ATLAS participants currently using to achieve independence?</p> <p>What factors or outcomes do participants determine and envision are indicators of their own success and independence in a postsecondary environment?</p>	Interviews conducted via guided questionnaire/qualitative analysis
Act. 3.2. Analyze data from Act. 3.1 to determine needs or limitation baselines specific to academic performance and self-determination.		

Objective 4. Support ATLAS participants to access and use AT specific to their needs or limitations and preferences identified under Objective 3.

Act. 4.1. Compile a list of the most common needs or limitations of participants as	Based on the interviews from ATLAS participants, what are the most common barriers?	Interviews conducted via guided questionnaire/qualitative analysis
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determined by baseline data from Act 3.2.		
<i>Act. 4.6.</i> Update, revise, or modify participants' IPOA based upon staff observation and participant self-assessment of how effective the recommended AT is assisting them to improve their academic performance and self-determination.	<p>What is the immediate impact on PSE access and success following the acquisition of and training on an AT device for an ATLAS participant?</p> <p>What is the immediate impact on self-determination and self-advocacy following the acquisition of and training on an AT device for an ATLAS participant?</p>	Tailored mid-use assessment two weeks after receiving AT/DCARS coaching notes
Objective 6. Determine the impact of AT use on the academic performance and self-determination of ATLAS participants and their overall independence levels.		
<i>Act. 6.1.</i> Design a final stage guided questionnaire to elicit feedback on the experience of using AT to access and succeed in PSE.	<p>What is the experience of using AT in a classroom like?</p> <p>How did using AT improve access or success in PSE environments?</p>	Interviews conducted via guided questionnaire/ DCARS notes/ qualitative analysis
<i>Act. 6.2.</i> Conduct individualized final-stage guided discussions with participants to elicit qualitative feedback on the experience of using AT in a PSE setting.	<p>How does the ATLAS participant's vision for PSE access and success align with their sense of independence and self-advocacy?</p> <p>What are the SS observations of the participants in ATLAS regarding their use of AT, self-determination, independence, and PSE access and success?</p>	
<i>Act. 6.3.</i> Complete a comparative analysis of initial and final stage findings from guided discussions and DCARS reports as detailed under the evaluation plan.	<p>How have participants' PSE access, success, and self-determination changed since joining ATLAS?</p> <p>What have SS coaches observed about ATLAS participants' independence?</p>	Interviews conducted via guided questionnaire/ mid-use surveys/ DCARS notes/ qualitative comparative analysis
<i>Act. 6.4.</i> Utilize evaluation findings to develop training materials to increase	What are the most promising practices and supported results the ATLAS intervention has	Interviews conducted via guided questionnaire/ mid-use surveys/ DCARS notes/

awareness of the benefits of AT in PSE for students with I/DD. Trainings will be offered to DROs and related student-serving entities who are partnered with the SIP-C program.	learned about AT use, PSE outcomes, and self-determination that could improve how DRO and student support staff in PSEs interact with students with I/DD?	qualitative comparative analysis
<i>Act. 6.5.</i> Design feedback surveys or questionnaires to collect feedback data from individuals attending professional trainings indicated in <i>Act. 7.1.</i>	What do DRO and other PSE student support staff say they found most useful in the trainings?	Feedback surveys
Objective 7: Increase awareness of the efficacy of AT in improving academic performance and self-determination in students with I/DD in PSE environments.		
<i>Act. 7.2.</i> Analyze qualitative and/or quantitative data collected from training attendees to identify, design, and incorporate informed revisions to training materials for future use.	What do DRO and other PSE student support staff say could improve about our trainings?	Feedback surveys

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ATTACHMENT 1: TIMELINE

Legend:

- AT: Assistive Technology
- ATLAS: Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD
- ATS: Assistive Technology Specialist
- AzTAP: Arizona Technology Access Program
- Co-PI: Co-Principal Investigator
- DRO: Disability Resource Office
- EV: Evaluator
- I/DD: Intellectual and Developmental Disability
- IPOA: Individualized Plan of Action
- IHD: Institute for Human Development
- PI: Principal Investigator
- PM: Project Manager
- PSE: Postsecondary Education
- SS: SIP-C Support Staff

GOAL: Empower individuals with I/DD to utilize AT effectively as a tool for accessing and succeeding in postsecondary education, thereby enhancing academic performance, fostering self-determination, and ultimately leading to greater overall independence.		
Objectives and Activities	Month of Completion	Person(s) Responsible
Objective 1: Prepare ATLAS project staff (PS) and SIP-C support staff (SS) to implement the project and achieve the intended outcomes.		
<i>Act. 1.1.</i> Create training materials and define learning outcomes for PS and SS.	1	PI, Co-PI, EV, PM, ATS
<i>Act. 1.2.</i> Provide SS with training on AT developed in Act. 1.1, to include assessing if a new or current SIP-C participant would benefit from AT.	1	EV, ATS, PM, SS
<i>Act. 1.3.</i> Train SS on the basics of setting up, using, and troubleshooting AT (low- to high-tech) that is most likely to benefit project participants.	1	EV, ATS, PM, SS
<i>Act. 1.4.</i> Explain intended outcomes and evaluation to SS, specifically the usage of the coaching questionnaire (Act. 1.6) required to record independence in the SIP-C Data Collection Reporting and Analysis (DCARS) system.	1	EV, ATS, PM, SS
<i>Act. 1.5.</i> Formalize the connection between SS and Arizona Technology Access Program (AzTAP) staff to include standardized	1-2	ATS, PM, SS

processes for initiating referrals or obtaining additional training for specific AT.		
<i>Act. 1.6.</i> Design a questionnaire for SS to record indicators related to overall independence. SS will utilize the questionnaire during typical coaching sessions for the duration of this project.	2 (ongoing)	PI, Co-PI, EV, PM, SS
<i>Objective 1 Outcomes:</i> Project and support staff trained to implement the project and utilize evaluation materials to achieve intended outcomes.		
Objective 2: Identify participants for the ATLAS project.		
<i>Act. 2.1.</i> Collaborate with the SS to identify ten (10) current or new SIP-C participants who may benefit from the use of AT in their PSE setting. <i>Note: Not all current or new SIP-C participants are likely to report they experience impeded access to, or success in, PSE; therefore, not all current or new SIP-C participants are likely to benefit from the ATLAS project.</i>	2	Co-PI, PM, SS
<i>Act. 2.2.</i> Obtain permission to share potential participants' information with the project Assistive Technology Specialist (ATS).	2	PM, SS
<i>Act. 2.3.</i> Obtain consent from selected individuals to participate in the ATLAS project from the individuals identified under activity 2.1.	2	PM, ATS
<i>Objective 2 Outcomes:</i> A minimum of ten current or new SIP-C participants are identified and consent to participate in the project.		
Objective 3. Assess participant's AT needs.		
<i>Act. 3.1.</i> Create a guided questionnaire informed by the SETT Framework and conduct guided discussions with ATLAS participants to determine: (a) needs or limitations impeding academic performance, (b) needs or limitations impeding self-determination, and (c) current and past AT use.	2	PI, Co-PI, EV, ATS
<i>Act. 3.2.</i> Analyze data from Act. 3.1 to determine needs or limitation baselines specific to academic performance and self-determination	2	EV
<i>Act. 3.3.</i> Meet with each participant to review the results of their guided discussions to needs or limitations they want to address through the use of AT.	3	ATS, SS
<i>Objective 3 Outcomes:</i> ATLAS participants participate in guided discussions to determine baseline needs or limitations specific to academic performance and self-determination.		
Objective 4. Support ATLAS participants to access and use AT specific to their needs or limitations and preferences identified under Objective 3.		
<i>Act. 4.1.</i> Compile a list of the most common needs or limitations of participants as determined by baseline data from Act 3.2.	3	EV, ATS
<i>Act. 4.2</i> Coordinate with AzTAP to identify various forms of AT (low- to high-tech) that can be used to effectively address the needs or limitations of participants as determined by baseline data from Act. 3.2.	3	ATS, PM, SS, AzTAP
<i>Act. 4.3</i> Expose participants to a broad range of AT that has the potential to address their needs or limitations by providing	3-4	ATS, PM, SS, AzTAP

opportunities for participants to experience and test AT identified in Act. 4.1.		
Act. 4.4 Develop an individualized plan of action (IPOA) for ATLAS participants.	4-5	ATS, SS
Act. 4.5. Lend the recommended AT to each participant and support all aspects of its use, including installation and training.	5 (ongoing)	ATS, PM, SS, AzTAP
Act. 4.6. Update, revise, or modify participants' IPOA based upon staff observation and participant self-assessment of how effective the recommended AT is assisting them to improve their academic performance and self-determination.	5 (ongoing)	PI, Co-PI, EV, ATS, SS, AzTAP
<i>Objective 4 Outcomes:</i> ATLAS participants are supported to experience and test AT to develop their IPOA and incorporate the usage of AT in PSE environments through iterative processes.		
Objective 5. Collaborate with participants on an individual basis to assist them in obtaining permanent AT.		
Act. 5.1. Assist participants who are eligible for vocational rehabilitation services to self-advocate by starting the process with vocational rehabilitation to obtain AT that has been integrated successfully.	6 (ongoing)	ATS, PM, SS
Act. 5.2. Assist participants who are eligible for campus disability resource services to self-advocate by starting the process with their disability resource office (DRO) to obtain AT has been integrated successfully.	6 (ongoing)	ATS, PM, SS
Act. 5.3. Locate and/or obtain free AT for participants (recycled, repurposed, donated, etc.).	6 (ongoing)	ATS, PM, SS, AzTAP
<i>Objective 5 Outcomes:</i> ATLAS participants obtain permanent AT.		
Objective 6. Determine the impact of AT use on the academic performance and self-determination of ATLAS participants and their overall independence levels.		
Act. 6.1. Design a final stage guided questionnaire to elicit feedback on the experience of using AT to access and succeed in PSE.	7	PI, Co-PI, EV, ATS
Act. 6.2. Conduct individualized final-stage guided discussions with participants to elicit qualitative feedback on the experience of using AT in a PSE setting.	8-9	EV, ATS
Act. 6.3. Complete a comparative analysis of initial and final stage findings from guided discussions and DCARS reports as detailed under the Evaluation Plan (link to section).	9	PI, Co-PI, EV
Act. 6.4. Utilize evaluation findings to develop training materials to increase awareness of the benefits of AT in PSE for students with I/DD. Trainings will be offered to DROs and/or related student-serving entities who are partnered with the SIP-C program.	9-10	PI, Co-PI, EV, ATS
Act. 6.5. Design feedback surveys or questionnaires to collect feedback data from individuals attending professional trainings indicated in Act. 7.1.	10	PI, Co-PI, EV
<i>Objective 6 Outcomes:</i> Impacts of AT as a means to access PSE and improve academic performance and self-determination in project participants is demonstrated; overall independence in project participants is increased.		

Objective 7: Increase awareness of the efficacy of AT in improving academic performance and self-determination in students with I/DD in PSE and K-12 environments.		
<i>Act. 7.1.</i> Prepare materials and complete professional development trainings for DRO and any student-serving entities using materials developed in Act. 6.5.	10-11	Co-PI, ATS, PM, SS
<i>Act. 7.2.</i> Prepare materials and complete professional development and information sessions to inform teachers and staff of local educational agencies (LEAs) about the benefits of AT, including evidence in support of using AT in K-12 classrooms.	4-12	Co-PI, ATS, PM, SS
<i>Act. 7.3.</i> Provide demonstrations to a minimum of four high schools illustrating the academic benefits of AT.	4-12	Co-PI, ATS, PM, SS
<i>Act. 7.4.</i> Analyze qualitative and/or quantitative data collected from PD and demonstration attendees to identify, design, and incorporate informed revisions to training materials for future use.	4-12	PI, Co-PI, EV, ATS
<i>Objective 7 Outcomes:</i> DROs, student serving campus entities, and K-12 teachers and staff have increased awareness of the benefits of AT in PSE and K-12 environments as related to improving academic performance, self-determination, and overall independence of individuals with I/DD.		
Objective 8: Sustain project outcomes by increasing awareness and building capacity for individuals with I/DD to access and use AT in PSE.		
<i>Act. 8.1.</i> SS participate in trainings offered to DROs and student-serving entities to increase SS understanding of AT in PSE environments and reinforce existing partnerships.	11-12	Co-PI, PM, SS
<i>Act. 8.2.</i> SS continue the use of the guided discussion and coaching questionnaire tools to ensure the AT needs of current and new SIP-C participants are assessed and participants are supported to access relevant AT.	Ongoing	PM, SS
<i>Act. 8.3.</i> Offer ongoing trainings to additional DROs, student-serving entities, service providers, and community members; secure opportunities to present on project outcomes at appropriate venues.	Ongoing	Co-PI, PM, SS
<i>Objective 8 Outcomes:</i> Project outcomes are disseminated resulting in sustained awareness and capacity building.		

ATTACHMENT 2: SUMMARY OF KEY STAFF

Kelly D. Roberts, PhD, Principal Investigator

Kelly D. Roberts, PhD, is the executive director of the Institute for Human Development (IHD) at Northern Arizona University (NAU). Dr. Roberts has worked in the disability and health and human service fields for over 30 years. She earned her doctorate in education, with an emphasis on learning disabilities and assistive technology, from the University of Hawai'i at Mānoa. She holds a master's degree in special education and a bachelor's degree in secondary education. While still doing field-based work, Dr. Roberts was certified by the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) as an assistive technology practitioner. Her doctoral dissertation was on voice recognition software as a compensatory strategy for college students with learning disabilities.

Dr. Roberts has extensive experience as an educator, researcher, and leader in the disability field. She is a former special education teacher and thus has a solid understanding of the educational needs of individuals with developmental and other disabilities. She has also worked in the child and adolescent mental health field, coordinating services for children and youth with mental health disorders. She currently serves on the Arizona Developmental Disabilities Planning Council (ADDPC) Grants and Contracts Committee and Executive Committee. Dr. Roberts has an excellent track record leveraging external funding and has been the lead author and principal investigator (PI) or co-PI on over 40 funded federal grants and state contracts, many of which focused on the needs of those with intellectual and developmental disabilities (I/DD).

Dr. Roberts will oversee the project and ensure the goals and objectives outlined in the narrative are met according to the project's timeline. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. Robert's will contribute 2.76% effort, or 0.33 person months, to the project as in-kind match.

Sakénya McDonald, PhD, Co-Principal Investigator

Sakénya McDonald is a distinguished educator and the assistant director of academic programs at IHD. Dr. McDonald is also the project director for the innovative U.S. Department of Education funded program, Supporting Inclusive Practices in Colleges (SIP-C). She earned her doctorate in sustainability education and has dedicated her career to dismantling stigma and bias by fostering programs and opportunities for increased community integration and social equity. Her intersectional focus and approach to inclusivity extends to connecting students of color and rural students with resources, services, and supports they define as being necessary to their educational journeys. Dr. McDonald has experience in designing and facilitating professional development, specifically in areas of intersectionality and Universal Design for Learning and is the current Vice-Chair of the Association for University Centers on Disabilities Multicultural Council. Recently, Dr. McDonald was awarded the Northern Arizona University's Commission on Disability Access and Design's Staff-of-the-Year award for her dedication and commitment to advancing awareness and reducing disability-related stigma and inequity.

Additionally, as a parent of a child with ADHD and a family member of an individual with a serious mental illness (SMI), she champions the active participation of advocates and believes their voice is a required component of all education, research, and service-related activities. Dr. McDonald will oversee the project's scope of work, ensuring its goals and objectives are met as described in the narrative and timeline. Dr. McDonald will also be responsible for deliverable reporting, evaluation support, and supervising staff. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. McDonald will contribute 5% effort, or 0.60 person months, to the project.

Tricia Carver, MA, Program Manager

Tricia Carver is a dedicated advocate and adept program manager with a proven record of accomplishment in effecting positive change. She is currently a program manager at IHD and holds a master's degree in counseling and bachelor's degree in biology. Ms. Carver has over 13 years of experience designing, implementing, and overseeing programs and special projects that address critical issues. Prior to her time with IHD, Ms. Carver led a team that developed a mobile health clinic to serve marginalized and minoritized populations in northwest Arkansas. The clinic began during the start of the COVID-19 pandemic as a free testing site and grew to include vaccinations, health screenings, and sexually transmitted infection (STI) testing. Ms. Carver's expertise in project management enabled her to advance important and culturally responsive strategies that improved community perceptions about COVID-19 and health management. She also has experience developing individualized plans for individuals with severe mental health diagnoses and for individuals with developmental and intellectual disabilities. Through strategic planning and effective communication, she has successfully navigated complex challenges, mobilized communities, and collaborated with stakeholders to advance key objectives. Ms. Carver has multiple family members with developmental disabilities and is aware of the importance and impact of having strong advocates. Driven by a deep sense of purpose, she remains dedicated to leveraging her expertise to create sustainable change and make a meaningful difference in the lives of individuals and communities.

Ms. Carver will provide administrative and logistical support by creating a training plan and schedule to help ensure the project's goals and objectives are met, as outlined in the narrative and timeline. She will also coordinate with SIP-C's lending process to accommodate assistive technology lending needs. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Ms. Carver will contribute 10% effort, or 1.20 person months, to the project.

Jade Metzger, PhD, Research Associate

Dr. Metzger holds doctoral, master's, and bachelor's degrees in communication. She is currently a research associate at IHD, and her work and experience have focused on interpersonal communication, evaluation of outcomes for programs focused on students with I/DD, and mentoring students with disabilities in postsecondary environments. She is currently the interim Mountain Hub lead for six universities within the National Science Foundation's Eddie Bernice Johnson INCLUDES Initiative: The Alliance for Students with Disabilities for Inclusion, Networking, and Transition Opportunities in STEM (TAPDINTO-STEM), which focuses on

peer-to-peer and faculty-to-student mentoring. Also, Dr. Metzger led a one-year evaluation of the SIP-C project. She conducted a scoping review on best practices for transitioning student with I/DD from high school to college; organized, conducted, and synthesized community, campus, and student focus group data; and highlighted student outcomes from self-reported data. All these components informed the creation of an inclusive postsecondary workbook for staff, faculty, parents, and counselors.

Dr. Metzger be responsible for evaluating programmatic and student outcomes for this project which entails developing and administering student and staff surveys, conducting semi-structured interviews, and synthesizing outside literature and internal programmatic data. Her efforts are expected to contribute to and include report writing for the project's deliverables. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. Metzger will contribute 5% effort, or 0.60 person months, to the project.

John McDermott, BA, Technical Training Analyst, Sr.

John McDermott will work in a part-time temporary capacity as a senior technical training analyst. Mr. McDermott holds a Bachelor of Arts and has over 25 years of professional experience, 14 of which were with IHD as the dissemination director, working in the developmental disabilities field. He is an expert in accessibility and will provide the project with assistive technology field support and training. Mr. McDermott will ensure users, staff, college partners, and other individuals are provided with adequate device and ordering information along with consultation and training. Mr. McDermott's trainings will be multifaceted and are expected to be offered in-person, via live webinar, or on recorded video. His contribution to this project will also include an analysis of future training needs. Under his guidance, records relating to training activities, user participation, and program effectiveness will be compiled and adequately stored.

The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Mr. McDermott will contribute 20% effort, or 2.40 person months, to the project.

Budget Request Form

Contractor Name: Northern Arizona University

Contractor Address: PO Box 4130 Flagstaff AZ 86011
 Street Address City State Zip

Project Name: Advancing Assistive Technology for Learning and Accessibility in Higher Education for Students with I/DD (ATLAS)

Budget Category	Requested ADDPC Funds	Non-Federal Cash Match	Non-Federal In-Kind Match	Total Program Cost
Personnel/Salaries	\$ 31,169	\$ -	\$ 4,845	\$ 36,014
Fringe Benefits	\$ 6,253	\$ -	\$ 1,221	\$ 7,474
Supplies / Operating Expenses	\$ 3,701	\$ -	\$ -	\$ 3,701
Travel	\$ 4,331	\$ -	\$ -	\$ 4,331
Rent or Cost of Space	\$ -	\$ -	\$ -	\$ -
Contracted Services / Professional Services	\$ -	\$ -	\$ -	\$ -
Administrative / Indirect Costs	\$ 4,546	\$ -	\$ 10,601	\$ 15,147
Total Costs	\$ 50,000	\$ -	\$ 16,667	\$ 66,667

It is understood that Non-Federal Funds identified in this budget will be used to match only ADDPC Federal Funds, and will not be used to match any other Federal Funds during the period of the ADDPC funded Project.

Additional description and background information shall be included as a budget narrative, including for match. The contractor agrees to submit additional background information to the ADDPC upon request.

Nicky Jurgens

Name of Certifying Official

Assistant Director, Pre-Award Research Administration

Title of Certifying Official

928-523-4880

Phone

NAU-OSP@nau.edu

Email

BUDGET NARRATIVE
Institute for Human Development at Northern Arizona University
Advancing Assistive Technology for Learning and Accessibility in Higher Education for
Students with I/DD (ATLAS)
12-Month Budget: July 1, 2024 to June 30, 2025

Personnel/Salaries

Kelly D. Roberts, PhD, Principal Investigator

(In-Kind Salary Value \$4,845; In-Kind Fringe Value \$1,221)

Dr. Roberts has worked in the disability and health and human service fields for over 30 years. She earned her doctorate in education from the University of Hawai'i at Mānoa, with her dissertation focusing on learning disabilities and voice recognition assistive technology (AT). She holds a master's degree in special education and a bachelor's degree in secondary education. Dr. Roberts has extensive experience as an educator, researcher, and leader in the disability field. She is a former special education teacher and thus has a solid understanding of the educational needs of individuals with developmental and other disabilities. She has also worked in the child and adolescent mental health field, coordinating services for children and youth with mental health disorders.

Dr. Roberts is the executive director of the Institute for Human Development (IHD) at Northern Arizona University (NAU). She has an excellent track record leveraging external funding and has been the lead author and principal investigator (PI) or co-PI on over 40 funded federal grants and state contracts, many of which focused on the needs of culturally diverse populations. Dr. Roberts will oversee the project and ensure the goals and objectives outlined in the narrative are met according to the project's timeline. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. Roberts will contribute 2.76% effort, or 0.33 person months, to the project as in-kind match.

Sakénia McDonald, PhD, Co-Principal Investigator

(Requested Salary \$4,639; Fringe \$1,600)

Dr. Sakénia McDonald, assistant director of academic programs at IHD, earned her doctorate in sustainability education and is a distinguished educator. She is the project director for the innovative U.S. Department of Education-funded program, Supporting Inclusive Practices in Colleges (SIP-C). She has dedicated her career to dismantling stigma and bias by supporting programs and opportunities for increased community integration and social equity. Dr. McDonald will manage the project's daily operations, ensuring its goals and objectives are met as described in the narrative and timeline. Dr. McDonald will also be responsible for deliverable reporting, evaluation support, and supervising staff. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. McDonald will contribute 5% effort, or 0.60 person months, to the project.

Tricia Carver, MA, Program Manager

(Requested Salary \$7,622; Fringe \$2,606)

Tricia Carver holds a master's degree in counseling and a bachelor's degree in biology. Ms. Carver is a dedicated advocate and adept program manager with a proven record of accomplishment in effecting positive change. She has over 13 years of experience designing,

implementing, and overseeing programs and special projects that address critical issues. Ms. Carver also has experience developing personalized plans for individuals with severe mental health diagnoses and for individuals with developmental and intellectual disabilities. As the project's program manager, she will provide administrative and logistical support by creating a training plan and schedule to help ensure the project's goals and objectives are met, as outlined in the narrative and timeline. She will also coordinate with SIP-C's IT lending process to accommodate AT lending needs. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Ms. Carver will contribute 10% effort, or 1.20 person months, to the project.

Jade Metzger, PhD, Research Associate

(Requested Salary \$4,108; Fringe \$853)

Dr. Metzger holds a doctorate specializing in communication, privacy, internet culture, and qualitative inquiry. She is currently a research associate with IHD, and her work and experience have focused on interpersonal communication, virtual communities, and niche digital cultures. Dr. Metzger has supported students with disabilities through her work with the TAPDINTO-STEM project, which is a National Science Foundation funded initiative that focuses on peer-to-peer and faculty-to-student mentoring. Additionally, Dr. Metzger led a one-year intensive research project for the SIP-C project, the purpose of which was to conduct a literature review and facilitate focus groups to determine strategies for advancing project sustainability efforts. Dr. Metzger will conduct a small-scale literature review and provide survey, data, and interview analysis to help meet the project's goals and objectives. She will be responsible for creating and administering initial and intermediate interview surveys to SIP-C students and will also conduct semi-structured follow-up interviews while ensuring accurate transcription. Her work is expected to contribute to and include report writing for the project's deliverables. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Dr. Metzger will contribute 5% effort, or 0.60 person months, to the project.

John McDermott, BA, Technical Training Analyst, Sr.

(Requested Salary \$14,800; Fringe \$1,194)

John McDermott will work in a part-time temporary capacity as a senior technical training analyst. Mr. McDermott holds a Bachelor of Arts and has over 25 years of professional experience, 14 of which were with IHD as the dissemination director, working in the developmental disabilities field. He is an expert in accessibility and will provide the project with AT field support and training. Specifically, Mr. McDermott will ensure users, staff, college partners, and other individuals are provided with adequate device and ordering information along with consultation and training. Mr. McDermott's training is expected to be in-person, via live webinar, or on recorded video, and include an analysis of future training needs. Records relating to training activities, user participation, and program effectiveness will be kept and adequately stored. The suggested level of commitment is appropriate for the scope of work required to fulfill the project's objectives. Mr. McDermott will contribute 20% effort, or 2.40 person months, to the project.

Fringe Benefits

The fringe benefit rates for NAU employees vary from person to person. Employee-related expenses (ERE) are rounded estimates based on the projected cost of health, dental, life, disability, FICA/Medicare, unemployment, and retirement benefits relative to the employee's salary and/or wages, FTE, and election of benefits. The employee's ERE rate is calculated by dividing his/her salary by the total cost of his/her benefit package. More information on NAU's fringe benefit rates can be found at: <https://in.nau.edu/osp/proposal-preparation-information/>

Staff Person	Salary*	Fringe Rate	Fringe Amount	Total Requested	Total In-Kind Match
Kelly Roberts	\$4,845	25.20%	\$1,221	\$-0-	\$6,066
Sakénya McDonald	\$4,639	34.50%	\$1,600	\$6,239	\$-0-
Tricia Carver	\$7,622	34.19%	\$2,606	\$10,228	\$-0-
Jade Metzger	\$4,108	20.77%	\$853	\$4,961	\$-0-
John McDermott	\$14,800	8.07%	\$1,194	\$15,994	\$-0-
Totals	\$36,014	NA	\$7,474	\$37,422	\$6,066

*The University definition of a "Year" for budgeting and management of senior personnel compensation is the fiscal year (July 1 to June 30). Salaries are based on current salaries adjusted for an approved April 2024 3% cost-of-living (COL) increase. The University defines academic salary based on 8.77 months, summer salary based on 3.23 months, and calendar salary based on 12 full months.

Total Requested Personnel Funds: \$37,422
Total In-Kind Match Personnel Funds: \$6,066

Travel

Funds of \$4,331 are requested to meet the project's travel needs and ensure its goals and objectives are met. The State of Arizona Accounting Manual was used to reference lodging and meals and incidental expense (M&IE) rates by locale. Note that Phoenix, AZ rates were used for lodging and M&IE, with the exception of the overnight trips to Yuma, AZ. Per NAU policy, vehicle rentals incur a mileage charge of \$.14 per mile, which is less than the State of Arizona Account Manual rate of \$.63 per mile for personal vehicle usage. For the purposes of this project, travel requiring the use of a vehicle will be requested through NAU Fleet Services. Vehicle rentals will be charged a daily rate and a mileage rate. Vehicle rental and mileage rates have been determined according to NAU's Fleet Services department. Google Maps was used to estimate mileage, with the NAU Campus (Flagstaff, AZ) as the starting point.

In-State Day Trips: \$3,551 is requested for Senior Technical Training Analyst John McDermott, and possibly SIP-C coaches, to travel to colleges throughout Arizona conducting AT demonstrations and trainings for SIP-C students, staff, and college partners. Thirty-eight day trips are projected and budgeted to ensure an adequate AT student needs assessment is conducted and that the students, and those involved with meeting their AT needs, are provided with sufficient training. The following is a summary of the cost items comprising the \$3,551 estimate for conducting the project's trainings and consultations throughout the Phoenix, AZ metropolitan and northern Arizona areas: \$1,444 for vehicle rental (\$38 daily rate x 1 day per trip x 38 trips); \$1,537 for vehicle mileage (289 round trip miles x \$0.14 per mile x 38 trips); \$570 for M&IE (\$15 daily

rate x 38 trips x 1 day per trip); sum of day trip amounts (\$1,444 vehicle rental + \$1,537 vehicle mileage + \$570 M&IE) = \$3,551.

In-State Overnight Trips: \$780 is requested for the technical training analyst to travel to Yuma, AZ to set up AT, demonstrate the AT, and train SIP-C students and staff on how to use the technology. A second trip to Yuma, AZ to pick up the equipment and return it to Flagstaff is also budgeted. The following is a summary of the cost items comprising the \$780 estimate for setting up and breaking down AT equipment in Yuma, AZ: \$152 for vehicle rental (\$38 daily rate x 2 days per trip x 2 trips); \$178 for vehicle mileage (636 round trip miles x \$0.14 per mile x 2 trips); \$214 for lodging (\$107 nightly rate x 2 nights); \$236 for M&IE (\$59 daily rate x 2 days per trip x 2 trips); sum of overnight trip amounts (\$152 vehicle rental + \$178 vehicle mileage + \$214 for lodging + \$236 M&IE) = \$780.

Sum of day trip and overnight trip amounts (\$3,551 day trip travel cost + \$780 overnight trip travel cost) = \$4,331 total requested travel cost.

Total Requested Other Expenses: \$4,331

Supplies

Funds of \$3,701 are requested to purchase assistive technology (AT) supplies. This funding will support students when Arizona Technology Access Program (AzTAP) loan devices are unavailable and may provide students with long-term use of devices. Given that effective AT is tailored to individual needs, we cannot predetermine the specific AT supplies that will be purchased. However, we anticipate the need for applications, software, digital recorders, screen readers, and assistive listening devices. Examples of possible AT supplies and their current costs: Medley Assistive Technology Communicator (cost: \$335; type: picture-based software), Philips SpeechMike Premium Touch SMP3700 (cost: \$369; type: text-speech device), OrCam Read Artificial Intelligence (AI) Assistive Reader (cost: \$1,615; type: assistive text reading AI device), Listen Technologies Assistive Listening Package (cost: \$1,382; type: assistive listening device). Sum of amounts (\$335 picture-based software + \$369 text-speech device + \$1,615 assistive text reader + \$1,382 assistive listing device = \$3,701).

To ensure responsible management and use of these resources, we will establish procedures and policies for tracking loaned devices, protocols for addressing lost or stolen devices, and guidelines for the return of devices at the project's completion or when a student exits the program. In the event that giving the device to the student is deemed necessary, a justification will be provided.

Total Requested Other Expenses: \$3,701

Other Expenses: \$-0-

Total Requested Direct Costs: \$45,454

Indirect Costs

Per Arizona Developmental Disabilities Planning Council (ADDPC) guidelines, indirect costs (IDC) are capped at 10% of allowable direct costs, which is the same rate used in the proposed project's related grant solicitation RFGA FFY-19-PSTSCD-001: Pilot Projects to

Support Inclusion Practices in Colleges. Calculation: ($\$4,546 \text{ IDC} = \$45,454 \text{ direct costs} \times 10\% \text{ IDC rate}$).

Total Requested Indirect Costs: \$4,546
Total Requested Direct & Indirect Costs: \$50,000

In-Kind Match

ADDPC requires a 25% match of total project costs. The required match for this proposal is \$16,667. The \$16,667 in-kind match comprises the \$6,066 value of Dr. Roberts' contributed salary and fringe benefit amounts, the \$1,783 in IDC that resulted from applying NAU's 29.4% federally negotiated rate to Dr. Roberts' salary and fringe total, and the \$8,818 in unrecovered IDC. Dr. Roberts' salary and fringe benefit amounts are calculated at \$4,845 and \$1,221, respectively, for a total of \$6,066. Unrecovered IDC is calculated at \$8,818 and comprises NAU's 29.40% federally negotiated rate less ADDPC's 10% IDC rate cap, or 19.4%, applied to the \$45,454 total requested direct costs. Sum of amounts ($\$6,066 \text{ salary and fringe} + \$1,783 \text{ IDC} + \$8,818 \text{ forgone IDC} = \$16,667$).

Total In-Kind Match: \$16,667
Total Requested Costs & In-Kind Match: \$66,667