



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:

04/22/2021

Institution

University of Missouri-St. Louis

Site Information

Implementation Date:

8/1/2021 12:00:00 AM

Added Site(s):

Selected Site(s):

University of Missouri-St. Louis, 1 University Blvd, St. Louis, MO, 63121-4400

CIP Information

CIP Code:

422814

CIP Description:

A program that focuses on the application of principles of learning and behavior to enhance the development, abilities, and choices of children and adults; and that prepares individuals to address the behavioral needs of individuals, especially those with developmental disabilities and autism. Includes instruction in behavior analysis and learning, behavioral and functional assessment, developmental psychology, applied behavioral analysis in developmental disabilities and autism, applied behavioral analysis in mental health and aging, research methods, evaluation of interventions, and professional and ethical issues.

CIP Program Title:

Applied Behavior Analysis

Institution Program Title:

Applied Behavior Analysis

Degree Level/Type

Degree Level:

Master Degree

Degree Type:

Master of Science

Options Added:

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Online

Student Preparation



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Special Admissions Procedure or Student Qualifications required:

Admission requirements include the Graduate School Application, copies of transcripts from former institutions, a minimum two reference letters, a letter of intent, and minimum GPA of 2.75. Because practicum requirements must be completed in an applied setting (e.g., school, clinics), students must have a suitable site prior to the second semester when the first practicum course occurs.

Specific Population Characteristics to be served:

The target population will be the current one, namely, prospective students from the Greater St. Louis Region. However, with the creation of a master's degree, we anticipate enrollment more students, who must possess a bachelor's degree and who desire the master's and BCBA eligibility. It is possible the online nature of the degree will attract populations beyond Missouri.

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

To teach in the program, instructors must have a BCBA or BCBA-D certification or have had robust graduate training in behavior analysis as demonstrated by a transcript analysis. Faculty in the ABA program must be screened and approved by ABAI to ensure that they possess the minimum credential and background to teach in an approved course sequence. ABAI has already pre-approved the UMSL full-time faculty and adjunct faculty who teach in the program.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

Dr. Andresa De Souza, Assistant Teaching Professor, will serve as the Program Director and will be the only full-time faculty who is eligible to teach in the ABA program because of credentials requirements.

Expectations for professional activities, special student contact, teaching/learning innovation:

All faculty are required to complete yearly professional development to maintain their credentials. Furthermore, faculty are required to maintain their BCBA or BCBA-D certification by completing CE credits in approved events.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 15	Part Time: 0	
Year 2	Full Time: 29	Part Time: 0	
Year 3	Full Time: 46	Part Time: 0	Number of Graduates: 14
Year 4	Full Time: 48	Part Time: 0	
Year 5	Full Time: 54	Part Time: 0	Number of Graduates: 16

Percentage Statement:

100.00

Program Accreditation

Institutional Plans for Accreditation:

Dr. Andresa De Souza has submitted the proposal curriculum changes to the ABAI to align with the new standards for certification. This association approves course sequences that enable graduates to sit for the BCBA examination; however, it also approves programs via accreditation. It is our intent to pursue accreditation once the new degree is approved. The UMSL College of Education has a long and impressive history of successful accreditation.

Program Structure



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Total Credits:

39

Residency Requirements:

n/a

General Education Total Credits:

0

Major Requirements Total Credits:

39

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
6648	2	Behavior Based Consultation and Supervision
6661	3	Capstone I in Applied Behavior Analysis (or EDUC 6998, Thesis Research)
6645	3	Ethics and Professionalism in Applied Behavior Analysis
6641	3	Basic Principles and Concepts of Applied Behavior Analysis
6644	3	Behavior Interventions in Applied Behavior Analysis
6643	3	Research Methods in ABA
6646	3	Verbal Behavior Concepts and Applications
6665	2	Practicum V in Applied Behavior Analysis
6662	3	Capstone II in Applied Behavior Analysis (or EDUC 6998, Thesis Research)
6651	2	Practicum I in Applied Behavior Analysis
6642	3	Behavior Assessment in Behavior Analysis
6652	2	Practicum II in Applied Behavior Analysis
6654	2	Practicum IV in Applied Behavior Analysis
6647	3	Advanced Concepts and Principles in Behavior Analysis
6653	2	Practicum III in Applied Behavior Analysis

Free Elective Credits:

0



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Internship or other Capstone Experience:

Six credits

Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus, CBHE-approved service region or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program within the geographically applicable area.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

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CHAFFIN

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5.C.1. Program Structure Form

- 1. Total Credits Required for Graduation: 39**
- 2. Residence requirements, if any: NA**
- 3. Major Requirements**
 - a. Total credits specific to degree: 39**

Courses (specific course or distribution area and credit hours):

Course	Hrs	Course	Hrs	Course	Hrs
SPED ED 6641: Basic Principles and Concepts of Applied Behavior Analysis	3	SPED 6651: Practicum I in Applied Behavior Analysis	2	SPED ED 6661: Capstone I in Applied Behavior Analysis (or EDUC 6998, Thesis Research)	3
SPED ED 6642: Behavior Assessment in Behavior Analysis	3	SPED 6646: Verbal Behavior Concepts and Applications	3	SPED ED 6648: Behavior Based Consultation and Supervision	2
SPED ED 6643: Research Methods in ABA	3	SPED ED 6652: Practicum II in Applied Behavior Analysis	2	SPED ED 6662: Capstone II in Applied Behavior Analysis (or EDUC 6998, Thesis Research)	3
SPED ED 6644: Behavior Interventions in Applied Behavior Analysis	3	SPED ED 6647: Advanced Concepts and Principles in Behavior Analysis	3	SPED ED 6654: Practicum IV in Applied Behavior Analysis	2
SPED ED 6645: Ethics and Professionalism in Applied Behavior Analysis	3	SPED ED 6653: Practicum III in Applied Behavior Analysis	2	SPED ED 6665: Practicum V in Applied Behavior Analysis	2

- 4. Free elective credits: 0**
- 5. Requirement for thesis, internship or other capstone experience: 6**
- 6. Any unique features such as interdepartmental cooperation: NA**

New Degree Program Proposal:

**Master of Science in
Applied Behavior Analysis**

University of Missouri – St. Louis

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(Some appendices are excluded from these materials for length and clarity and are available upon request.)

Executive Summary

UMSL proposes to create a new M.S. in Applied Behavior Analysis (ABA) degree for five primary reasons: the existing success of the UMSL ABA Certificate Program with potential for greater enrollment, the curriculum's pre-approval by the premier professional organizations in the discipline, evidence of workforce needs, potential for online delivery of the degree, and financial analysis demonstrating fiscal viability and production of new revenue.

First, the proposed program will build upon UMSL's current ABA Certificate Program that has experienced seven years of success. Currently, UMSL students wishing to become Board-Certified Behavior Analysts (BCBAs) must complete the M.Ed. in Special Education degree (33 credits) and an additional 18-21 ABA-specific credits to obtain the ABA Certificate, for a total of 51 credit hours. The proposed degree will be 39 credits, which will streamline students' path to a degree and make it an attractive option for students.

Second, the proposed program is built to meet new coursework requirements of the profession's credentialing bodies. Students completing UMSL's existing 51-credit-hour option after January 1, 2022 would no longer be eligible to take the BCBA exam. This proposed program has been pre-approved by the Association of Behavior Analysts International (ABAI) as meeting the new requirements.

Third, the proposed program addresses important workforce needs. Market analysis reveals an enormous need for BCBAs and Burning Glass analyses estimated that up to 20,000 new jobs will be created in Missouri, Illinois, and Kansas in the next decade. This represents a 23% growth rate. Reports from our partners in the St. Louis Region demonstrates that schools and agencies experience a shortage of qualified practitioners and welcome the creation of the UMSL ABA master's degree.

Fourth, stemming from the market capacity and economic growth through employment, the master's program will be offered online (i.e., a combination of synchronous and asynchronous components), thereby crossing local and state borders and having a potential international audience. Importantly, all courses are currently offered online in the certificate program.

Fifth, our financial analysis demonstrates an increase in revenue will occur in the first year of the program and more definitively as enrollment increases. No new operating expenses are needed because the ABA Certificate Program is already in place and the curriculum is almost identical to the master's program; therefore, existing resources in place for the ABA Certificate program (e.g., faculty, marketing) will be employed concomitantly in the master's program. Thus, in addition to addressing a market need, the program will increase enrollment and revenue.

1. Introduction

Academic components of the program and degree paths. The proposed program is a 39 credit-hour Master of Science Degree in Applied Behavior Analysis (ABA). Applicants enter the program with a bachelor's degree. Its academic components are coursework (23 credits), practicum (10 credits), and a capstone research project (6 credits), and these are sequenced by semester to clarify the pathway to graduation (see section 5.B.). Completing this program allows the graduate to sit for the national licensing examination to obtain the credential as a Board-Certified Behavior Analyst (BCBA). The degree is designed to be delivered online with a combination of synchronous and asynchronous course components.

Graduates move into positions as BCBAs providing direct service to children, adolescents, and adults, many of whom have developmental disorders. Graduates work in a variety of settings, such as schools, community agencies, hospitals, and private practices. The primary focus of their work is the assessment and identification of social and behavioral deficits as well as maladaptive behavior, collection and analysis of data relating to these behaviors, development of intervention plans to ameliorate behavior deficits and challenges, and the implementation and evaluation of the intervention plans. Behavior analysts are professionals whose foundation frameworks is based on the behavior theory. Applied behavior analysts use the scientific knowledge gained from behavior analysis to make changes to socially significant issues by employing evidence-based intervention and making data-based decisions.

According to Martin and Carr (2020), there has been a substantial increase of ABA discipline and practitioners worldwide. The number of certified BCBAs have grown exponentially since 1999 when the certification became available. Carr and Nosik (2017) suggested that the growth in the number of BCBAs might be a result of two factors. First, the increase in high-quality applied research and robust results demonstrating the effectiveness of ABA interventions have become well known thus promoting the increase in the demand for services. The second factor related to the number of states in the USA passing legislation which mandated health insurance coverage of ABA interventions for children with ASD. Currently, most health insurances (including Medicaid) will only approve ABA interventions for children with ASD if the service is supervised by a BCBA. With a prevalence of 1 to 54 children with a diagnosis of ASD in the USA (CDC, 2020), the demand for services is larger than the availability of BCBAs.

Evolution of the program and reason for proposal. A master's degree is required to obtain the BCBA. In 2011, UMSL became the first of the UM campuses to pioneer a nationally accredited ABA Certificate Program meeting the requirements established by the two major accrediting bodies in the field: Association for Behavior Analysis International (ABAI) and Behavior Analyst Certification Board. We launched the

program to satisfy an extreme local demand for BCBA professionals. Furthermore, few university-accredited-BCBA programs in the State of Missouri existed at that time.

The original (and current) design of our program was to use our Master of Education Degree in Special Education, with a Concentration in Autism and Developmental Disabilities, as the basis for our students to meet initial requirements to achieve their BCBA license. Our current master's degree program requires 33 credit hours (See Appendix A for full curriculum). However, this degree alone does not include the required coursework necessary for the BCBA license eligibility. Six additional courses (18 credit hours), earning students a university graduate certificate in Applied Behavior Analysis, must be taken over and above the required 33 credit hours for the master's degree. With the current changes required to meet examination qualifications, 10 out of the 11 courses students need to take in the MEd in Special Education degree are ultimately not relevant towards BCBA candidacy qualification. The required BCBA courses added to the master's degree are displayed in Appendix B. Consequently, along with earning their M.Ed. degree, our students take an additional six courses, totaling 51 (33 + 18) credit hours, to meet the national BCBA licensure eligibility requirements. As a result, our students must complete a total of 51 credit hours to complete the master's degree and certificate in ABA that leads to BCBA licensure eligibility. The additional coursework beyond the master's degree creates a circuitous degree route to obtain the BCBA certification. We describe this path to the BCBA as a "Master's Degree Plus" Program.

Courses for the certificate in ABA are taught by UMSL faculty and regional, expert behavior analysts who work in highly respected centers for autism treatment and research, including specialized behavior treatment facilities in the Greater St. Louis Metropolitan Area. The Master's Degree Plus Program has been successful since its inception in 2011, when it was approved by the Missouri Department of Higher Education and achieved approval from the national Behavior Analysis Certification Board. To date, 65 graduate students have completed the master's degree plus, and all graduates met the requirements to sit for the national BCBA licensure examination. Over the past 4 years, enrollment has steadily increased with an average of 9 students per cohort. Appendix C displays enrollment trends since 2017.

Beginning in 2022, graduates of ABA master's programs must meet new course and supervised experience requirements in order to sit for the licensing examination for the BCBA, the requirements of which are displayed in Appendices D and E, respectively. Our proposed degree in ABA meets the new requirements for the BCBA which we expect will lead to greater student demand than similar types of programs in the past. Furthermore, the courses and sequence have been preapproved by ABAI (Appendix F).

National examination results. There are nine public and private institutions in the State of Missouri with approved course sequences allowing graduates to sit for the national BCBA exam. Those located in the Greater St. Louis Metropolitan Area are UMSL, Lindenwood University, Saint Louis University (SLU), and Webster University. Only three of the nine programs in the state have graduated enough students to qualify for publicly available pass rates on the BCBA examination. According to the Behavior Analysis Certification Board (2013-2018), those institutions and their average 5-year pass rates are: UMSL (78.50%), Lindenwood (47.00%), and SLU (79.00%). The national average pass rate is 64.20%, and the state average pass rate is higher at 74.28%. The higher pass rate for the state is attributed to the performance of graduates from UMSL and SLU. The remaining six institutions are new programs or have too few candidates to qualify for reporting of scores.

Conclusions on the current degree. The advantages of the current Master's Degree Plus are that (a) students earn a master's degree, which is a foundational requirement for the BCBA, (b) students are qualified to sit for the national certification examination on which a passing score results in the awarding of the BCBA, and (c) program graduates have positive pass rates. However, the significant disadvantage of the Master's Degree Plus Program is that it requires an onerous, 51-credit-hour path to the BCBA licensure eligibility. UMSL faculty who recruit prospective students have reported that the lengthy degree plan and high number of required courses are an impediment to recruiting students. Prospective applicants know that they can complete a master's degree Plus Program in Applied Behavior Analysis faster and for fewer credit hours at other St. Louis metropolitan region institutions (Lindenwood, 42 hours; SLU, 39 hours). Thus, the current UMSL Master's Plus Program is less expedient and more costly when compared to other university pathways to earning the BCBA certification in the region. In summary, despite the merits of the Master's Degree Plus Program, the high number of credit hours makes the degree unattractive to students due to its length of coursework, additional tuition, and the costs of books/fees. Moreover, all the benefits associated with the master's degree Plus model would be shared by the new model, except that students will earn a M.S. degree in Applied Behavior Analysis rather than an MEd in Special Education.

The solution to the excessive number of credit hours required in the current program is to separate it from the Master's in Special Education, which will continue to enroll and graduate students, and establish a Master of Science Degree in ABA. Because the master's Plus Program will no longer meet requirements for qualifying students for taking the BCBA exam after 2022, the proposed program will continue to provide accreditation requirements of the ABAI and the Behavior Analysis Certification Board, thus qualifying graduates to sit for the BCBA examination. Establishing a stand-alone master's degree would also make UMSL program similar to BCBA programs of other universities across the nation. Moreover, the proposed degree will be delivered online with synchronous and asynchronous components.

Need for offering the degree. To work as a BCBA, one must possess a master's degree, have appropriate coursework in ABA, accrue the required number of hours of supervised fieldwork, and pass the national examination. As noted in the preceding section, UMSL has created a pathway for students to achieve this goal; however, in using an existing special education degree, the pathway is onerous and circuitous. Faculty advisors also report that prospective students choose other programs because of the prohibitive number of credits required.

By establishing a degree in ABA (not special education), UMSL will provide a direct route to a degree, accredited coursework, and the licensure examination, while increasing enrollment. As a point of information, we plan to retain the current University certificate in ABA for students who matriculate at UMSL with a master's degree in a related field but, with the addition of the certificate courses, would qualify for the licensure examination. This plan targets two groups—those who need a master's degree and those who need the ABA coursework. However, our recruitment analysis shows the vast majority of prospective applicants do not hold a master's degree. As such, we expect 70% of new students to be enrolled in the M.S. program and 30% to be enrolled in the Certificate program. Whereas the master's degree plus program typically admitted an average of nine students, we project this number to double in size.

Persons responsible for the success of the program. The proposed degree will be housed in the Department of Educator Preparation and Leadership in the College of Education. This is the department home for UMSL ABA Certificate. Dr. Andresa De Souza, BCBA-D, whose faculty appointment is in this department, is the current Program Director and will continue in this role upon the creation of the degree. No additional faculty hires are anticipated in the next three years. We propose to hire an Assistant Professor in Year 5 of the program contingent on program growth and vitality. We discuss this in greater detail in Section 3 on finances.

2. University Mission and Program Analysis

2.A. Alignment with Mission and Goals

Alignment with UMSL's Strategic Plan. Our proposed program fundamentally aligns with UMSL's mission: "We transform lives." Not exclusively related to the lives of graduate students with whom we work in the university setting and/or its virtual environment, we impact the lives of families impacted through the positive initiatives that inform our Greater St. Louis Metropolitan Area and beyond. In agreement with UMSL's vision, as "a force for good, and a leader in the pursuit of excellence in education, impactful research, and community service," our proposed program is dedicated to supporting our university's pledge to offer "education for everyone who is willing and able to seek it out." Honoring "our land-grant beginnings," the proposed program, in tandem with UMSL's fundamental academic philosophies, "positions (us) as partners in the search for knowledge, progress, and positive change for ourselves, our communities,

our world.” This proposal also supports a number of specific goals outlined in the 2018-2023 UMSL Strategic Plan, including:

Goal 1: Increase the number of educated citizens in the St. Louis region. The proposed program meets UMSL’s fundamental purpose to educate and graduate diverse populations of students in their search for different and better lives. Per this goal, our proposed program offers qualified students access to our already-proven, high-quality ABA certificate program that “prepares them for success in the classroom and beyond as they become leaders of our economy and communities.” As noted above, enrollment trends from 2017-2020 (see Appendix C) are stable, and 9-11 students graduate with the ABA certificate. As discussed later, the proposed masters will double that enrollment and graduate 18-22 students annually by Year 7.

Goal 2: Enhance academic quality and learning experiences. The proposed program’s enhanced academic quality and learning experiences, which are contemporary, are based upon behavioral science and ABA, and are considered best practice. Its cohort-based, year-round schedule will “create an environment for enrollment growth.” Also, per the UMSL’s Strategic Plan to “expand and enhance student employment and internships,” our five-semester practicum sequence allows students to have 25-contact-hour/week internships. Typically, students complete their fieldwork in schools or clinics where they are compensated for their work by the practicum site. The preapproval of courses by ABAI adds yet another layer of quality assurance to the program.

Goal 6: Integrate community engagement as a critical component of a university education and collegiate experience. This strategic goal has been a major initiative of the Special Education Program, especially supporting disability education and outreach. The proposed program carries forward the fulfillment of this goal, as it endeavors to “recognize and celebrate community engagement at all levels.” It advances UMSL’s compact goal to “integrate community engagement as a critical component of university education and collegiate experience.” In a later section of this proposal, we discuss five letters from leaders of school districts, agencies, and businesses who welcome our continuing partnership. Furthermore, we identify several existing relationships with schools and agencies that will continue to welcome our students and graduates.

Alignment with College of Education Mission. The mission of the College of Education is: *“We advance educational knowledge and practice. We partner with communities. We promote diversity, equity, and excellence.”* In addition to congruence with the UMSL strategic plan, the goals of the M.S. in ABA program described in the above align with UMSL’s College of Education’s mission. Specifically, the UMSL M.S. Program will generate research and disseminate it to the field of ABA, and Dr. Andresa De Souza, Program Director, has 11 publications and 13 conference or invited presentations in the past three years. As discussed below, we already have an existing network of ABA partners throughout the St. Louis Region in schools, agencies, and businesses. Moreover, because so many BCBA’s work with individuals with developmental disabilities, the ABA program clearly promotes diversity and equity among our students and the people with whom they work.

The Program as a Campus and College Priority. The faculty associated with the ABA program foresaw the changes in accreditation and licensure standards almost two years ago. Consequently, they began planning to create the Master's in ABA by engaging their department faculty and the dean College of Education in the Spring 2019 semester. When it was apparent there was department and college support for a standalone master's degree, the dean engaged Academic Affairs, and discussions with the provost were subsequently supportive of this proposal. Over the past 18 months, drafts of the preproposal were shared with first the Dean's Office and eventually with Academic Affairs. This proposal has the support of the College of Education and Academic Affairs.

2.B. Duplication and Collaboration Within Campus and Across System

Within the University of Missouri System, the University of Missouri in Columbia is the only institution with a master's degree in ABA program. Over the past 18 months, Dr. Ann Taylor, Dean, UMSL College of Education, initiated discussions with Dr. Kathryn Chval, now former Dean, MU College of Education, about a possible collaboration between UMSL and MU. Dean Chval requested that we consult her faculty. Dr. De Souza and Associate Dean Michael Bahr, both UMSL faculty members, spoke with current Interim Dean, Dr. Erica Lembke, then Chair of the Department of Special Education, at MU. The UMSL faculty shared program information regarding the proposed degree; curriculum and course sequence, and related information. Dr. De Souza, Dr. Lembke, and the MU ABA faculty met and discussed course-sharing between our programs, especially since the UMSL program will be delivered online. With approval of the M.S. in ABA program, we plan to explore with Mizzou faculty the opportunities for course sharing. (Note: Dr. Lembke from MU has provided a letter of support, a copy of which is included in Appendix G with all letters of support discussed later).

While these discussions continue, it is important to note similarities and differences between the MU and UMSL programs. Both the MU program and the proposed UMSL program are 39 credit-hours. Whereas the UMSL program will be delivered online, the MU program is campus-based. Because of online delivery, UMSL attracts a specific student population, who would otherwise not be able to attend the program because of their geographical location. In addition, most of our students hold full-time employment and have families. In summary, the two programs are sufficiently different in structure and both have the potential to coexist without any significant concerns about cross-campus competition. The opportunity to complete a program from their place of residence while maintaining full-time employment makes the UMSL Master's program desirable for a specific group of students who are not able to relocate or attend as master's program as a full-time student.

In contrast, students attending the master's program at MU must attend classes on-campus and are required to complete their first year of practica at the MU Thompson Center for Autism and Neurodevelopmental Disorders. Only in their second year are students allowed to procure paid employment outside of the Thompson Center. Thus,

proximity to Columbia is essential in order to complete the required program practica. Because of this, the characteristics of the two programs are different and attract a separate type of applicant. For example, the practica for the proposed UMSL program will be at a site of the student's selection while the student holds a paid position. Primary practicum sites for our students have typically included the sizable cache of children with disabilities in the St. Louis Region in schools such as Special School District (approximately 22,000+ total) and other schools and agencies (discussed in Section 5.B).

3. Business-Related Criteria and Justification

3.A. Market Analysis

3.A.1. Rationale and Workforce Demand for the Program

BCBAs work in a wide range of organizations, including early childhood education settings, clinics, residential treatment centers, schools, and in-service organizations. Therapies and interventions based in the principles of behavior analysis (a.k.a., ABA therapy) are recognized and endorsed by the U.S. Surgeon General, and nationally leading, humankind research and practice organizations: the American Academy of Pediatrics (Evidence Review of Interventions for Autism, 2011), National Institute of Mental Health (Autism Spectrum Disorder, 2018), and Center for Disease Control and Prevention (Treatment for Autism Spectrum Disorder, 2019).

ABA, considered the "gold standard" of behavioral intervention, is a discipline relying upon research-driven, evidenced-based principles that significantly enhance the quality of life of individuals with specific habilitative, behavioral, and educational needs. Research shows that in addition autism, individuals with related disorders (e.g., intellectual impairments) also benefit from ABA interventions (Axelrod, McElrath, & Wine, 2012; De Souza & Rehfeldt, 2013; Neidert, Dozier, Iwata, & Hafen, 2010). ABA interventions positively impact behaviors such as aggression, self-injurious behavior, and elopement (Matson & Nebel-Schwalm, 2007).

ABA interventions can build vital, useful skills, such as language and communication skills (De Souza, Fisher, & Rodriguez, 2019; Kurtz, Boelterc, Jarmolowicz, Chin, & Hagopian, 2011), academic skills (Belfiore, Lee, Vargas, Skinner, 2013; Eckert, Ardoin, Daly III, & Martens, 2013), social skills (Chandler, Lubeck, & Fowler, 1992), and daily living skills (Cannella-Malone et al., 2006) among learners of all ages. The principles of ABA are proven effective in both structured situations, such as classrooms, as well as in unstructured, more natural, everyday situations, such as social opportunities, play, general home-life interactions, and the workplace to improve the individuals' abilities to listen, read, converse, attend, and engage positively with and gain empathy for others (Granpeesheh, Tarbox, & Dixon, 2009). The overall goal of ABA is to promote change to (a) social relevant issues, (b) personal independence, and to (c)

enhance the quality of life of those involved. From a prevention perspective, research has shown that ABA interventions can significantly improve behavior and abilities and decrease the demand for special services (Flynn & Healy, 2012; Roane, Fisher, & Carr, 2016).

With the high incidence of ASD diagnosis – 1 in every 54 children (Center of Disease Control and Prevention, 2020) – there is a high demand for BCBAs in response to insurance and service regulations across the treatment for children with ASD. The Behavior Analyst Certification Board (2020) reported that there was a 2,000% increase in the annual demand in the USA for professionals holding a BCBA certification from 2000 to 2020. Anecdotal reports show an increase in awareness and requests for ABA treatment for children with autism and other developmental disabilities in contrast with the reality of the shortage of trained BCBAs.

Currently, there are 5 university-based master programs approved to prepare BCBAs in Missouri. Under this scenario, prospective student from outside of the range of these universities, must relocate for training. One solution to overcome issues related to the geographical barrier is the creation of online programs. Because our proposed, M.S. in ABA program will provide students with all the requirements to sit for the BCBA exam and will be delivered online, we present ourselves as a strong competitor and program option for local, state, and national students seeking the BCBA certification.

Lastly, and from a service perspective, local BCBA agencies in St. Louis cite a 2-year “waiting list” of children who need BCBA services. To address this need, we will enroll students who desire expertise in the science of ABA, and in earning their BCBA certificate and State licensure to practice ABA therapies in local classrooms, agencies, and beyond.

Potential Impact: Benefits to UMSL Students and UMSL Community. We consistently hear from prospective UMSL applicants that it would benefit them to enter a master’s degree program in ABA earning the BCBA credential requirements in tandem with their employment in Greater St. Louis schools or agencies. Having a master’s degree in ABA provides a more compact and time-efficient program of study. This is very attractive to students who desire an advanced degree seamlessly incorporating preparation for the national certification examination, while they continue working in their current jobs. Furthermore, the online delivery of the program combined with synchronous and asynchronous formats will allow students to secure full-time employment while maintaining a balance between their studies and personal life as the time spent commuting to and from the campus is eliminated.

Demand Based upon Analytics. Demand continues to surge for BCBA practitioners who are certified to provide ABA interventions proven to produce meaningful, behavioral changes in children and adults with intellectual and developmental disabilities, as well as those with the autism diagnosis. A mid-year 2020 report from

the U.S. Centers for Disease Control and Prevention finding the 1 in 54 U.S. children have autism indicates a prevalence rate of 1.8585%--up from 1 in every 5959 children (1.77%) in their 2018 report. Similarly, a news release from Washington University's School of Medicine, distributed April 2018, provides new data indicating that increasing rates of children diagnosed with autism persist, and that children typically benefit from years of individualized ABA interventions provided by licensed BCBAs. Clearly, more BCBAs are needed.

Additionally, as an alert from families needing ABA services for children with autism, the CDC's Community Report on Autism 2018, [A Snapshot of Autism Spectrum Disorder in Missouri](#), stresses the critical need for BCBAs in our state. Howard Smith, the Director of the Greater St. Louis Region-St. Louis City/St. Charles County First Steps program, noted an increase in early childhood care referrals, and the continuing need for services targeting young children and their families in the Greater St. Louis Metropolitan Area. Furthermore, a recent report by the Behavior Analyst Certification Board (2020) indicated that there were 233 job postings for BCBAs in Missouri in 2019, thereby creating a vibrant potential job market for our graduates. As of February 21, 2021, there are 33 ABA positions advertised in Missouri for this month alone. The positions range from behavior technicians to clinical directors of treatment centers. This rate of job opportunities is consistent with monthly trends over the past three years.

Social Work Licensure (Behavior Analyst, n.d.) reports that because of extreme need, now is an excellent time to pursue a BCBA certification. It projects a job growth rate of 14% in the next decade, a rate significantly faster than U.S. economic growth projections (per the U.S. Bureau of Labor Statistics) and faster than the average for all professions. According to Social Work Licensure, BCBAs are critically needed to improve understandings of mental health and behavioral patterns.

Similarly, Burning Glass Technologies, a software company that collects and analyzes U.S. labor market data, includes online job postings collected from over 50,000 sources. Their database, used to assess the national employment demand for behavior analysts from 2010 to 2018, asserts that the demand for behavior analysts is ever-increasing. Annual demand for individuals holding BCBA/BCBA-D certification "increased approximately 1,942% from 2010 to 2018, with increases seen in almost every State" (Behavior Analyst Certification Board, 2018).

A detailed Burning Glass Market Analysis (see Appendix H) for this proposal revealed an average relative growth (10.04%) of related job postings over the next 8 years in the States of Missouri, Illinois, and Kansas and high growth rate (16.04%) nationwide. This will result in the creation of 11,385 new jobs. As noted above, over 200 ABA jobs were available last year in Missouri with over 30 openings currently available in February 2021. Overall, graduates of ABA/BCBA programs commonly transition into seven different occupation groups such as social work (47.6%), mental health

therapy (22.1%), and mental and behavioral counseling (15.3%). The Burning Glass Market Analysis showed the majority of jobs posting in applied behavior analysis requires a master's degree (50.9%) and 0 to 2 years of experience (69.4%). Finally, 83% of job postings are in Health Care and Social Assistance, and Educational Services industry. A great need for BCBAs continues and the role of the university in forming competent and ethical professionals is paramount.

We received significant backing from the UMSL College of Education and community partners, including schools and agencies. Letters of support (see Appendix G) stress the high demand for professionals with a BCBA credential in the St. Louis region. These letters endorse the need for high-quality programs to prepare new BCBAs who will play a crucial role in agencies serving children and adults with disabilities in the St. Louis area and beyond. Appendix G also contains letters of support from the UMSL Chancellor and Provost.

As Donald McCary, Executive Director of Planning and Development, Special School District of St. Louis County, noted in his letter of support:

"Difficulties in recruiting and retaining skilled BCBAs has become one of the primary constraining factors to school districts seeking an effective means of addressing increasingly complex behavioral concerns and to the growth of businesses seeking to provide effective treatments to children and adults with disabilities."

Mark Keeley, President/CEO of the St. Louis Arc, noted:

"We currently employ several BCBA's and we anticipate hiring many more in the coming years. We have a waitlist for our services at the present time because we cannot get enough qualified staff. Your proposed master's degree in Applied Behavior Analysis will ensure a steady stream of highly educated professionals to help meet not only our needs but the needs throughout St. Louis and the rest of the US."

Vince Hillyer, President and CEO of Great Circle, an agency serving individuals with autism, wrote:

"[The increase in autism] has resulted in a statewide and nationwide shortage of Board-Certified Behavior Analysts...available to meet the needs of this growing population. Because ABA-based therapies have proven very effective for children with autism and other related disorders, Great Circle recognizes the importance of having highly qualified BCBAs to provide this effective treatment....A program such as the UMSL ABA program can play an integral role in Great Circle's efforts to address important community needs."

Dr. Ann Taylor, Dean of the UMSL College of Education, observed:

"The proposed MS Degree streamlines our existing [ABA] Program for the benefit of students and employers. Currently...students take a circuitous route--through an MEd in Special Education followed by additional course work in behavior analysis--to complete the degree and satisfy the requirements to sit for the national licensing examination as a BCBA. The proposed 39-credit-hour degree eliminates this problem, with the added benefit that graduates earn a degree in behavior analysis rather than a certificate. The proposed route matches degree plans from UMSL competitors across the country and should result in increased enrollment...The college is pleased, once again, to be able to respond to the workforce needs of our state and region through providing a quality offering for educators in our region."

3.A.2. Student Demand for the Program

The enrollment model for this program is predicated on several assumptions and guide enrollment projections represented in the following Student Enrollment Projection tables. The assumptions were developed based on (a) current practices in the Master's Plus Program (e.g., students take 2-3 courses per semester and continue to work full- or part-time in a setting delivering ABA services), (b) current enrollment in the certificate program plus an expectation that enrollment will increase given our market analysis, (c) a high retention rate in the certificate program (i.e., 90% or higher after one year, 100% thereafter), and current enrollment indicating most students (i.e., 90% or more) are residents of Missouri. Our assumptions include the cannibalization of 7 students annually who would have otherwise pursued the M.Ed. in Special Education.

The program requires full-time student enrollment. Students matriculate in the fall semester and graduate in at the end of the summer session two years later. Students take 2-3 courses per semester, one of which is a practicum in most cases. The practicum may be completed at a student's place of employment. As a result, a student's attendance in the program technically cuts across three fiscal years. The assumptions are:

- In Years 1 and 2 of the program, we project 15 students will be admitted, followed by 18 in Years 3 and 4. In Year 5, the program maximum of 22 new students per cohort each year is achieved, and enrollment stabilizes thereafter.
- Annual admission projections above include 7 students transferring from existing master's Plus certification program. (Note: From 2018-2020, the M.Ed. in Special Education has a median of 68 students enrolled in fall and spring classes. This program will lose 7 students per year, although the increase in total ABA students in the master's will more than offset these

losses. Tab 2, SCH Cannibalization Projections, in the Pro Forma provides data on this issue.)

- Student retention between the first and second years in the program is 90% and 100% from the second year to graduation.
- Maximum total program enrollment of 62 students is reached in year 7. This maximum is projected to consist of 44 students new to campus and 18 students transferred from other campus programs.

Program capacity is reached when 22 students are admitted per year. Given the strong market analysis and the significant local support for the program, we expect an initial enrollment projection of 15 students, minimally, in the first and second years of the program. By year 5, we expect 22 students per year. These projections are represented in Table 1a—see below.

The following is a supplementary table that show enrollment by fiscal year.

Table 1a—Student Enrollment TOTAL Head Count Projections by fiscal year (anticipated total number of students in program)

PROGRAM:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Full-time	15	29	46	48	54	58	62

Notes: This table includes all students enrolled including those 7 students transferring from other existing programs. Program capacity for all cohorts is reached in Year 7 with an anticipated total enrollment of 62 students.

The students will comprise a combination of those primarily seeking the M.S. Degree in ABA and those who possess a master’s degree and are interested in the ABA Certificate only. The latter group (certificate only) is projected to be small in number and may elect to complete two additional courses and obtain a second master’s degree. Effective January 1, 2022, the Behavior Analyst Certification Board will approve candidates for the BCBA examination with a master's degree in any area of study along with appropriate course requirements and 2000 hours of supervised experience. Thus, there is the potential to attract students who already possess a master's degree but still need to complete the required coursework and practicum experience in order to qualify for taking the BCBA examination. These students will receive the Certificate in ABA, although they could obtain the MS. Degree by adding two courses.

The next two tables display the number of students new to campus each year (Table 1b) and the projected number of degrees awarded (Table 1c).

Table 1b. Student Enrollment NEW TO CAMPUS Projections (anticipated number of students in program new to campus and total cumulative [i.e., first and second year students])

PROGRAM	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Full-Time	8	8	11	11	15	15	15
Part-Time							
Total Cumulative	8	16	19	22	26	30	30

Table 1b includes only new students—does not include those cannibalized.

Table 1c. Projected Number of Degrees Awarded

PROGRAM	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
# of Degrees Awarded	0	0	14	14	16	16	20	20	20	20

Table 1c reflects the 2-year sequence required for students to complete the program, which means they graduate in the third fiscal year from their semester of matriculation.

3.B. Financial Projections

Our proposal was reviewed by the UMSL fiscal officer, Tina Hyken.

3.B.1 Additional Resources Needed

One Time/New Resources

Faculty dedicated to the existing certificate program will be reassigned to the proposed new master's program; therefore, there are no immediate one-time or start-up expenses.

Recurring – Faculty

In Year 2, we plan to offer a graduate research/teaching assistantship to one student in each cohort. The tuition waiver and stipends are funded by tuition revenue generated through the new students admitted to the program. Projections include a 2% annual cost increase for both the tuition waiver and the students' stipends.

In Year 5, we propose to add a new faculty member due to (a) program growth and increased enrollment, (b) the special requirements (i.e., certifications, licensure) required to teach in the program, and (c) a procedural safeguard to avoid the program being person dependent. The additional faculty member will be added contingent upon the sustained market demand and the program continuing to meet enrollment targets. Financial projections include modest moving costs as a benefit in year 5 and full-time benefits in years 5 and forward. Projections include a 2% annual cost

increase for salary and benefits at the current UMSL full-time rates. Should the program have fewer than the target of 54 students, the COE would delay or cancel the new hire.

As total student headcount increases immediately, adjunct instructor costs increase immediately in Year 1 scaling up until Year 4 and then leveling off as the new faculty member is hired and enrollment stabilizes. The St. Louis metropolitan region has adequate expertise to fulfil these modest needs for adjuncts. Projections include a 2% annual cost increase for salary and benefits at the current UMSL part-time rates.

Recurring – Other

Immediately, there are two recurring operating costs. First, the ABAI certification requires an annual professional membership, national and state certification, and program yearly approval estimated at \$2,740. Second, we estimate on-going targeted recruiting costs at \$5,000. Projections include 1% annual cost increase for these items.

In Year 5, there are two additional recurring operating costs associated with the new faculty hire. Annual recurring computing expenses and materials/supplies have been estimated at \$1,500 and \$3,000 respectively with 1% annual cost increases.

Recurring – Campus Overhead Allocation

Finally, the pro forma recognizes that every academic program has an obligation to contribute towards the organization's costs of operations. UMSL has no formal process allocating overhead to academic units. As a proxy, information provided by UM System Controller's Office estimates this overhead cost at \$83.06 per student credit hour. Overhead costs included in the Proforma are projected based on the total student credit hours generated including those generated by transferred students.

3.B.2. Revenue

As evident in the revenue analysis vis-à-vis program expenses, the source of revenue is student tuition and fees. The previous enrollment projections provide a basis for our revenue analysis. Additional assumptions included in the revenue projections are: 1) Tuition and Education supplemental fee increases by 2% annually; 2) Similar to other master's program in the College, students are 90% resident and 10% non-resident; 3) UMSL On-line supplemental fee is excluded; 4) Tuition and fee revenue from seven students transferred from other programs is excluded; and 5) Tuition scholarships for the two graduate research/teaching assistants discussed above are treated as a reduction in total tuition revenue. This treatment is consistent with generally accepted accounting procedures.

UMSL operates a centralized budget system in which all tuition generated by the College of Education and 20% of the College of Education Supplemental Fee are received by general operating accounts at the campus level. Upon approval of this new degree, UMSL will determine what portion of new tuition revenues would be converted to additional general revenue allocations to the College of Education (for expenses based on Proforma) and Graduate School (for graduate assistant scholarships). As a courtesy, we have placed one table from the Pro Forma in Appendix I showing enrollment, revenue, and expenses.

3.B.3. Net Revenue

Program net revenue is displayed Table 2 below. The revenue generated by tuition is juxtaposed to expenses, and noteworthy, the program will be profitable in its first year and beyond. Even with the addition of a new faculty member in Year 5 (FY26), the program remains profitable. By Year 7 (FY28), revenue becomes stable when enrollment capacity (i.e., 22 new students each year) is achieved.

Table 2. Financial Projections for Proposed Program for Years 1-5

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>					
<i>Equipment</i>					
<i>Library</i>					
<i>Consultants</i>					
<i>Other</i>					
Total one-time					
B. Recurring					
<i>Faculty</i>	21,000	59,507	77,698	83,587	132,886
<i>Staff</i>					
<i>Benefits</i>	1,607	4,552	5,944	6,394	34,632
<i>Equipment</i>					
<i>Library</i>					
<i>Other</i>	7,740	7,817	7,896	7,975	15,406
<i>Campus Overhead</i>	17,443	40,699	50,002	53,325	58,806
Total recurring	\$47,790	\$112,576	\$141,539	\$151,281	\$241,730
Total expenses(A+B)	\$47,790	\$112,576	\$141,539	\$151,281	\$241,730
2. Revenue per year					
<i>Tuition/Fees</i>	65,981	168,572	173,251	200,054	248,950
<i>Institutional Resources</i>					
<i>State Aid</i>					
<i>Other</i>					
Total revenue	\$65,981	\$168,572	\$173,251	\$200,054	\$248,950
3. Net revenue (loss) per year	\$18,191	\$55,996	\$31,712	\$48,773	\$7,220
4. Cumulative revenue (loss)	\$18,191	\$74,188	\$105,899	\$154,673	\$161,893

3.B.4. Financial and Academic Viability

To assure both academic and academic viability, the following table displays enrollment projections by the end of Year 7.

Table 3 Enrollment at the End of Year 7 for the Program to Be Financially and Academically Viable.

Viability	Minimum Enrollment
Academic	30
Financial	54
Overall	54

Our annual admissions projections for the first two years of the program ($n = 15$) are conservative. Thereafter, we predict enrollments of 18 new students per year with a maximum of 22 in Year 5 and afterward. Maximum student enrollment is reached in Year 7. To maintain cohort viability and justification for instructional resource allocation, academic viability requires a minimum of 30 students by fiscal Year 4.

Financial Viability is determined based on a sensitivity analysis of the enrollment which is the primary driver of the revenues. As noted above, financial viability is predicated on a minimum of 18 students per cohort each year (total of 54 in the program) by Fiscal Year 4 and thereafter. Various expense and revenue scenarios are represented in the Sensitivity Results. At the base level assumptions, the net margin to campus is positive, though modest, at Year 1 after campus overhead allocations. With the exception of the new faculty member proposed for Year 5, program expenses are relatively small. Should enrollment fall below the necessary levels, the proposed addition of a full-time faculty member would be reassessed. The Enrollment Sensitivity Analysis found in Appendix J (and in the Pro Forma) displays financial results for Year 7 (when maximum total program enrollment stabilizes) at variances ranging from negative 25 percent to positive 20% of the predicted 22 students admitted. Actual results can be as much as negative 21% below projection before proposed program margin AFTER application of campus overhead results in a negative net result.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategy

3.C.1. Marketing Plan

UMSL's online M.S. in ABA degree will maintain a strong presence on its College of Education website. An asset in marketing the program is the precedent of students completing either the master's plus and/or the certificate program. Recruitment, therefore, is ongoing and makes marketing easier. That notwithstanding, there will

be available brochures describing the program's features, highlighting the program's pathway to potential student career goals. Information meetings about the program will be held once each semester, with non-UMSL guest speakers who will emphasize the importance of growing the BCBA numbers to meet the critical demand regionally and nationally. The new program can also be marketed as part of UMSL and UM System initiatives to offer online programming. Many of the BCBA courses can also be applied towards UMSL doctoral studies and research-based programs. Additionally, the COE recruiter will support these marketing efforts to regional school districts.

The ABA degree is a moderately-sized, graduate-intensive program, which reflects a tightly connected network of organizations hiring BCBA's to work with students and adults with developmental disabilities. Our local market analysis has demonstrated a strong need from schools and agencies, including small businesses serving people with developmental disabilities. Program faculty continue to receive a steady stream of requests from area businesses and prospective applicants. Consequently, recruitment is and will continue to occur through the local contacts faculty have with schools, agencies, and businesses turning to UMSL for prospective graduates.

3.C.2. Student Success Plan

The students in the proposed program will attend full-time, and most will be tuition-paying. The COE organizational structure is designed specifically for student success, and this begins with a prospective applicant's contact with a graduate advisor in the Office of Advising and Student Services. These advisors specialize in work with the ABA program and students. The advisors partner closely with program faculty through all stages of the graduate student experience—recruitment, assignment of a faculty advisor, retention through student supports (e.g., financial aid, writing center, Graduate School policies) and the graduation application and audit of the program of study. The expertise of the advising unit complements the close practicum supervision by faculty required in the ABA program.

3.C.3. Transition Plan

This is an important, already stable program that has a solid record of successfully transitioning through the loss and hire of faculty with expertise in ABA. The latest loss of an ABA faculty member (through retirement in 2019) had little effect on the program because members of the special education faculty have knowledge and expertise in ABA and can assist with program needs when they arise. Consequently, we are confident of program sustainment, even through faculty changes. Should the program director choose to leave, a national search would commence immediately. This would be done to assure a qualified and credentialed BCBA would direct the program.

3.C.4. Exit Strategy

The COE actively monitors all programs to ensure maximum efficiency, and we address program viability through continuous program improvement. The COE dedicates a position—a director or associate dean—to quality assurance. This work is coordinated through the work of the COE Curriculum and Program Quality Committee. Plus, the shared nature of some ABA courses with special education potentially minimizes program cost.

Faculty in ABA program are well qualified to teach in the special education program. Therefore, if the program suffered an unanticipated sustained enrollment drop, such as 15 or fewer students total in the program, as a result in changes in market demand, we would examine the viability of the program and close it, transferring faculty resources to another high demand special education area.

4. Institutional Capacity

Drs. Ann Taylor, Dean of the UMSL College of Education, Marie Mora, Provost & Executive Vice Chancellor for Academic Affairs, and Kristin Sobolik, UMSL Chancellor, are supportive of establishing the proposed degree, and they recognize the potential for a more direct route for the preparation of students desiring the BCBA. There is potential for significantly increasing the enrollment, from the current 11 students in the program in 2020-2021 to 22 students per cohort by the program's fifth year. Again, please see their letters explaining the rationale and justification for institutional support of this degree (see Appendix G).

Our proposed program will be based in the Department of Educator Preparation and Leadership within the College of Education. This department currently offers the Master of Education Degree in Special Education and the University Certificate in Applied Behavior Analysis. The proposed program's faculty leaders, Dr. De Souza and others, are also based in this department. The department supports the proposed program. Moreover, the College pledges to continue offering exemplary instructional delivery, practicum supervision, and superb, in-house academic advisement and support.

Furthermore, the Dean of the College of Education and the Chair of the Department of Special Education from Mizzou, former Dean Katherine Chval and Interim Dean Erika Lembke, respectively, have expressed their support for the creation of a M.S. in ABA program and welcome future planning and collaboration.

Regarding ability to develop, implement, and teach online courses, Dr. De Souza is already teaching online courses offered in the program as are other faculty members, including our adjuncts. She is currently a Fellow of the ACUE Program, a comprehensive and independently validated statement of teaching competencies that prepares faculty, through a year-long program, to implement proven evidence-based instructional practices to improve student achievement and close equity gaps. With

the support of the UMSL Center for Teaching and Learning, current instructors (a) have already participated in professional development for online instruction and/or (b) have or will receive certification for competence online instruction. Finally, it is important to note that the courses in the proposed degree are already being offered online, and quality control practices are currently in place institutionally.

5. Program Characteristics

5.A. Program Outcomes

After completing the M.S. in ABA Program, students will have practitioner-level knowledge of foundations and application of ABA (see Appendix K for the Curriculum Map for the M.S. in ABA Program). As a point of information, all COE programs are currently working with the UMSL Center for Teaching and Learning on the Curriculum Alignment Process (or CAP). In addition to developing ABA program outcomes (next paragraph), the curriculum map displays the relationship between program outcomes and courses, including the level of introduction, development, and mastery for each program outcome.

Specifically, our program outcomes are:

- Discuss the philosophical underpinning of behavior analysis;
- Identify and explain the concepts and principles of applied behavior analysis;
- Implement measurement of behavior and properly display and interpreted data;
- Describe the different types of experimental designs use in applied behavior analysis research;
- Conduct behavior assessments and implement behavior-change procedures;
- Select and implement individualized intervention procedures;
- Explain the main aspects of supervision and staff management;
- Demonstrate professional behavior in accordance with the Professional and Ethical Compliance Code for Behavior Analysts.

5.B. Program Design and Content

The proposed degree has three distinct features:

- This is a 39-credit hour, standalone degree in applied behavior analysis.
- The degree will be offered online with asynchronous and synchronous components.
- It retains meeting the standards approved by the ABAI, whereby the Behavior Analysis Certification Board approves the course sequence that will allow graduated students to gain approval from the BACB to sit for the national certification examination.

The proposed program will require five practicum courses, starting in the second semester, each of which require 400-clock hours of clinical experience. In our current program, the majority of our students are employed in schools or clinics where they deliver intervention services to children and adults. Students must secure access to a practicum site and field supervision by a BCBA during their first semester of studies.

The inclusion of two capstone courses in the second year of the program enables students to engage in research-based, applied projects focused on the children and adults with whom they work. In addition to enhancing clinical skills, the program will require and promote applied research. If an individual would like to pursue doctoral study after completing the master's degree, the curriculum allows a student to substitute six credits of thesis research in place of the capstone courses.

In terms of prospective enrollment, admission will be conducted annually to create a cohort-based program with full-time students. We project the number of admitted students to increase to 15-20 students per academic year. Projected increased enrollment is due to our market analysis on the local and national need for BCBAs. Additionally, delivery via online instruction will promote greater flexibility for students.

Revision to national standards. As noted earlier, existing programs and coursework must be updated to meet new BCBA credentialing standards by January 2022. Appendix D displays the changes fundamental to crafting the program's coursework meeting the revised guidelines by this date. In addition to a denser course load, the Behavior Analysis Certification Board has increased the required supervised fieldwork hours BCBA candidates must complete before sitting for the exam (see Appendix E).

To meet the new certification requirements, we are proposing coursework meeting the national BCBA standards, which include a required 2000-hour supervised fieldwork experience as part of our practicum courses. The curriculum for the proposed degree is listed in the Program Structure Form (next section, 5.C.1). As previously noted, this 39 credit-hour program meets the nationally mandated curriculum modifications. Recent curriculum changes (i.e., renumbering) were completed create a clearer sequence of courses throughout the program.

The M.S. in ABA Program will be a six-semester master's program with a course sequence that will provide learning in a logical and constructive manner. In the first semester, students will take courses involving basic principles and concepts, research methods, and behavior assessment. During their second semester, students will take courses related to behavior intervention practices and ethics in ABA. From their first Summer to second Spring semester, students will take courses involving advanced concepts, including a course on behavior-based consultation and supervision.

Students will enroll in the first practicum course in their second semester of the program (Spring I), and thereafter in every semester until their last semester of the program (Summer II). Students enrolled in the program will be expected to accrue the 400 supervised, clock hours per semester throughout five semesters, for a total of 2000 hours (see Appendix D for BACB requirements related to supervised experience hours).

Per the BACB requirements, students must have direct contact with a qualified BCBA for 5% of their hours. Students must have 20 hours of direct contact with a supervisor for each semester of practicum. The BACB allows 50% of contact hours (10 hours) to be earned under group supervision, with other BCBA candidates among groups not to exceed 10 students; the other 50% of contact hours should be earned via individual meetings supervised by a qualified BCBA supervisor. Students in the M.S. in ABA program will receive 50% of direct contact supervision during practicum courses. An UMSL faculty member, who is a qualified BCBA supervisor, will provide supervision in a group format following a curriculum designed to strengthen students' knowledge and enhance their clinical skills. The M.S. in ABA will be a clinically intensive program designed to fully prepare future BCBA's to meet all requirements for certification and develop crucial skills to perform independently in the field.

Clinical Supervision Sites in the St. Louis Region. Under the new January 2022 certification requirements, BCBA candidates must accrue 2000 hours of supervised fieldwork experience involving the application of ABA. BCBA candidates typically accrue their hours in the current workplace or in sites appointed by faculty members. Distinct to UMSL's program is its respect for and embrace of BCBA program participants' (our constituents') active work environments. Their workplaces serve as labs where learned knowledge is applied and practiced. Currently, such placements are typically provided in educational or agency settings and specialized clinics where most UMSL BCBA participants work in the Greater St. Louis Metropolitan Area. With the online M.S. program, faculty and students will work together to identify appropriate sites where the students can accrue the required hours and experiences needed to sit for the exam.

Although weekly practicum hours per week can vary by site, an average of 25 hours/week of behavior analytic activities over 5 semesters, totaling 2000 hours, is required. Practica are composed of two components: 1) Direct supervision by an onsite supervisor typically employed in the student's practicum site. The supervisor will be responsible for required direct observation and individual supervision meetings with the student; and 2) Group supervision conducted in the context of the practicum courses by an UMSL qualified instructor. Group supervision will be conducted via synchronous online meetings, irrespective of whether the student placements are in the St. Louis Metropolitan Region or beyond.

St. Louis Special School District (SSD). Among UMSL's clinical placements for BCBA preparation is Special School District of St. Louis County (SSD), serving more than 22,000 area students who receive special education services or technical education. For UMSL students, SSD provides supervised, clinical experiences, as well as an abundant laboratory hosting collaborative oversight ideal for experimental study, practice, and innovation. Their full range of related services incorporates a broad spectrum of behavioral interventions, including ABA, as well as speech therapy, occupational therapy, and assistive technology services considered vital for children for whom teams of educational professionals and parents develop respective Individualized Education Programs (IEPs).

In addition, SSD calls upon UMSL special education faculty to assist as a resource to SSD staff through workshops and projects and to consult on cases to support unique needs of students with disabilities and their families. The College of Education, in turn, hires SSD professionals as adjunct faculty, as needed. Experienced and credentialed professionals effectively share and apply their contemporary knowledge and experiences.

St. Louis Public Schools (SLPS). The St. Louis Public School district (SLPS) serves more than 3,300 students who receive special education services. UMSL has an extensive history of collaboration with SLPS, providing coursework opportunities and specialized programs of study over past decades to SLPS faculty participating in cohorts, or for those singularly seeking greater expertise and accompanying career advancement. Our BCBA program students who work full-time for the SLPS complete their supervised practicum hours on location within their own schools and/or classrooms in St. Louis.

St. Louis-based private schools. In the Greater St. Louis Metropolitan Area, there are over 300 private schools. Many long-established and strong independent schools exist, as well as an active parochial school network. The St. Louis region is nationally ranked as having one of the largest percentages of enrollment in Catholic parochial schools, as measured by the number of registered Catholics in the Greater St. Louis Metropolitan Area. Archdiocesan schools are also the number one employer of graduates from UMSL's Teacher Education Program. Our BCBA Program students are continually welcomed by their school leadership staff to apply behavior analytic techniques that improve particular students' individual and classroom comporment.

St. Louis-based programs for children with special needs. In addition to the specialized services provided in greatest numbers by SSD and SLPS, numerous non-school clinics offer our BCBA students their on-site practicum placements with credentialed, on-site personnel available. For example, Greater St. Louis is home to agencies whose experts serve the metropolitan area and beyond, such as the St. Louis Arc, Midwest Easter Seals, YMCAs, Variety St. Louis, and the Midwest Area Brain Injury Association.

Proximity to competitor institutions. Actively serving the Greater St. Louis Metropolitan Area's 2.8 million population—equivalent to 46% of the State of Missouri's total population—UMSL is St. Louis' only public university that prepares nationally-approved BCBA's. Besides ours, nearby university based BCBA programs, is Lindenwood University. It is known that Lindenwood is the ABA master's degree program preferred by students who live in the Greater St. Louis Metropolitan Area because students desire to earn a master's degree that includes the approved BCBA coursework. We have admitted into our ABA Certificate/BCBA Program several defectors, veteran Lindenwood students who claim that what attracted them initially to LU was that it provided a full master's degree program in ABA (versus UMSL's master's degree plus program). These students are attracted to UMSL because of program quality.

5.C. Program Structure

As previously noted, the UMSL ABA Program is a 39-credit hour degree. The program structure comprises three components: (a) course work, (b) a series of practica (supervised clinical experiences), and (c) a capstone requirement. All courses have been approved and are in the UMSL Bulletin, although two are undergoing minor changes to course numbers to sequence them with the ABA curriculum.

Courses are sequenced so that initial skills are acquired early in the program prior to the first practicum. Thereafter, coursework builds upon previous learning in earlier classes. The practica follow the courses. For example, in the first semester of the program, the focus is on basic ABA principles and behavior assessments. In the following semester, activities and assignments in Practicum 1 focus on using the basic principles of ABA as applied to assessments conducted in real work settings. Appendix L contains course syllabi, and these note course prerequisites. Appendix K is helpful to revisit because it provides the curriculum map showing the acquisition and development of skills over time throughout the curriculum.

5.C.1. Program Structure Form

- 1. Total Credits Required for Graduation: 39**
- 2. Residence requirements, if any: NA**
- 3. Major Requirements**
 - a. Total credits specific to degree: 39**

Courses (specific course or distribution area and credit hours):

Course	Hrs	Course	Hrs	Course	Hrs
SPED ED 6641: Basic Principles and Concepts of Applied Behavior Analysis	3	SPED 6651: Practicum I in Applied Behavior Analysis	2	SPED ED 6661: Capstone I in Applied Behavior Analysis (or EDUC 6998, Thesis Research)	3
SPED ED 6642: Behavior Assessment in Behavior Analysis	3	SPED 6646: Verbal Behavior Concepts and Applications	3	SPED ED 6648: Behavior Based Consultation and Supervision	2
SPED ED 6643: Research Methods in ABA	3	SPED ED 6652: Practicum II in Applied Behavior Analysis	2	SPED ED 6662: Capstone II in Applied Behavior Analysis (or EDUC 6998, Thesis Research)	3
SPED ED 6644: Behavior Interventions in Applied Behavior Analysis	3	SPED ED 6647: Advanced Concepts and Principles in Behavior Analysis	3	SPED ED 6654: Practicum IV in Applied Behavior Analysis	2
SPED ED 6645: Ethics and Professionalism in Applied Behavior Analysis	3	SPED ED 6653: Practicum III in Applied Behavior Analysis	2	SPED ED 6665: Practicum V in Applied Behavior Analysis	2

4. Free elective credits: 0

5. Requirement for thesis, internship or other capstone experience: 6

6. Any unique features such as interdepartmental cooperation: NA

Online Delivery. The degree is designed as an online graduate program with a combination of synchronous and asynchronous delivery. Coursework and practica will combine online, asynchronous instruction with occasional synchronous sessions, especially for the practica.

Historically, the large majority of students completing the ABA Certificate Program have been working students with full-time jobs in schools and clinical settings. The flexibility provided by an online program can facilitate student adaptation to academic expectations while accommodating their work and personal responsibilities. We incorporated synchronous meetings in the program for two reasons: 1) We believe that direct contact among students and with instructor can facilitate the sense of community and collaboration; and 2) as per the certification requirement, the supervision involved in practica must be conducted synchronously.

To ensure quality delivery of instruction, all content courses have already been or will be fully developed through guided course-development program supported by the UM-System Office of eLearning and UMSL's Center for Teaching and Learning (CTL).

In addition, course development will be supervised by a full-time, PhD-level faculty. Courses will be delivered using best practices in online teaching and learning. Quality assurance of instruction delivery will be implemented by (a) review of Canvas content by a full-time faculty; (b) end-of-course evaluation; and (c) student passing rate in the BCBA National Exam.

One expectation and goal of the online M.S. in ABA program is the enrollment of students outside of the St. Louis area and across the State of Missouri. As noted earlier, with the worldwide spread of the benefits of ABA for the intervention of children and adult with developmental disabilities, there is also the potential of attracting a broader audience of students interested in behavior analysis. Finally, we recognize the potential for the online M.S. in ABA Program becoming part of the UM System initiatives in the future.

Course Descriptions and Syllabi. To be approved as a Verified Course Sequence (VCS) by the ABAI, a full syllabus must be submitted for each course to ensure that students will receive instruction in all topics described in the BCBA Task List V. See Appendix L for abbreviated versions of syllabi.

5.D. Program Goals and Assessment

The primary goal of the program is to prepare master's level behavior analysts, who are prepared to successfully sit for the national licensure examination and become BCBA's. The certificate program currently has a 90% retention rate and 100% graduation rate after the first year. As mentioned earlier, the national pass rate on the BCBA licensure assessment is 64.20%, but UMSL graduates have a 78.50% pass rate, which we expect to continue or improve. We also anticipate that capstone projects may qualify for presentations at state and national organizations, and some may qualify for publications in refereed journals. Graduates will continue to significantly enhance the St. Louis workforce and beyond, and we anticipate continued job placement rates exceeding 95%. The program goals are predicated on the national standards promulgated by ABAI, and as noted earlier, the courses have already been approved by ABAI. We again reference the curriculum map in Appendix K showing the acquisition and development of skills as students progress through the program

Major Program Assessments. Primary programmatic assessments students will complete are:

- ***Class Participation.*** Students will be evaluated in their ability to participate and contribute to online lectures, discussion boards, group work, role-play, and online discussion. Students will be assessed in their critical skills, knowledge of subject, and technical language.
- ***Practical Application Assignments.*** Practical application assignments allow students to apply the concepts and technologies learned in the

course to simulated situations that commonly face practicing behavior analysts.

- **Paper Review.** Students will complete and submit written reviews of empirical paper from the behavior analytical literature. The review should include all the relevant information involving the article and should conform to APA style. In addition, student might be requested to critically analyze the experimental design, results, and authors conclusions.
- **Quizzes and Exams.** Quizzes will be designed to assess the student's mastery of course content and encourage student to be prepared for class meetings. In addition, quizzes and exams will assist in preparing students for the BCBA Certificate Exam.
- **Course Project.** Students will be required to work on and submit a written report of an application project involving the practice of behavior analysts across different courses. Student will be evaluated on the appropriateness of the project, consistency with behavior analytic literature, writing style and APA format presentation.

5.E. Student Preparation

The target population will be the current one, namely, prospective students from the Greater St. Louis Region. However, with the creation of a master's degree, we anticipate enrollment more students, who must possess a bachelor's degree and who desire the master's and BCBA eligibility. It is possible the online nature of the degree will attract populations beyond Missouri.

Admission requirements include the Graduate School Application, copies of transcripts from former institutions, a minimum two reference letters, a letter of intent, and minimum GPA of 2.75. Because practicum requirements must be completed in an applied setting (e.g., school, clinics), students must have a suitable site prior to the second semester when the first practicum course occurs. As discussed above, UMSL is fortunate to have well-developed partnerships with schools and agencies across the St. Louis Metropolitan Area.

5.F. Faculty and Administration

To assist us in reaching the goal of revising the way UMSL prepares graduate students to become BCBAs, we hired a leading researcher-practitioner in ABA from Emory University's Marcus Autism Center: Dr. Andresa De Souza, BCBA-D, who has led the development of our proposed Master's in ABA including plans for its implementation and growth. In her brief time at UMSL, Dr. De Souza has helped us change and incorporate the accreditation standards established by the ABAI into the proposed degree.

To meet the January 2022 new BCBA accreditation standards, existing UMSL faculty expertise will be called upon to teach courses on ABA sciences and applying ABA's proven strategies in their classrooms and agencies. Dr. De Souza's international reputation in research and clinical/practical experience will continue to draw students to UMSL to gain ABA expertise from her program leadership. Further, the proposed M.S. in ABA degree program will have existing professional staff support from the College of Education's Office of Advising and Student Services. The COE has dedicated two full-time staff members, Susan Johnson and Marty Woytus, to recruitment and advising for the ABA program. To maintain the standards and requirements of the program, the department will continue identify supports to assure the administration of the program. The support is consistent with the administration of similar graduate programs in the department.

Dr. Andresa De Souza, Assistant Teaching Professor will serve as the Program Director. Between teaching and overseeing all aspects of the program (e.g., recruitment, hiring of faculty, maintaining approval of course sequence, coordinating student-practicum sites), she will dedicate 60% of her time to the program with teaching corresponding to approximately 18 credit hours. Tenure track line faculty are required to teach 180 – 240 SCH per academic year while non-tenure track line faculty are required to teach 320 – 400 SCH per academic year. At the present time, Dr. De Souza is the only UMSL full-time faculty who is eligible to teach in the ABA program because of credentials requirements. We currently have a pool of part-time faculty who teaches in the ABA program: Lisa Gilbertsen, M.S., BCBA, LBA; Angela Range, M.S., BCBA, LBA; Katie Brenneman, M.S., BCBA, LBA; Daniella Pizzella, PhD., BCBA, LBA, and Karl Schoenherr, Ph.D, BCBA-D, LBA.

To teach in the program, instructors must have a BCBA or BCBA-D certification or have had robust graduate training in behavior analysis as demonstrated by a transcript analysis. Faculty in the ABA program must be screened and approved by ABAI to ensure that they possess the minimum credential and background to teach in an approved course sequence. ABAI has already pre-approved the UMSL full-time faculty and adjunct faculty who teach in the program. All faculty are required to complete yearly professional development to maintain their credentials. Furthermore, faculty are required to maintain their BCBA or BCBA-D certification by completing CE credits in approved events.

Quality of Instruction and Student Success. Several steps will be implemented to assure and enhance the course quality of the program. At a basic level, best practices in course development and delivery of instruction will be a program expectation for program faculty and adjuncts. These include full development of each course prior to its commencement, creation of an organized and instructionally-rich Canvas course website, inclusion of multiple instructional methods (e.g., video lectures, URLs to supplemental resources, links to required and recommended readings, discussion board), and varied course requirements for evaluation of student performance.

Students have direct contact with faculty through practicum supervision and capstone development and advisement. Programs in the UM-System Office of eLearning and UMSL's Center for Teaching and Learning will be key resources for professional development for online teaching and learning, and all faculty teaching in the program are or will be certified by the UMSL CTL to teach online.

5.G. Alumni and Employer Survey

As part of the program assessment plan, annual assessments via Qualtrics with graduates and their employers will be completed to ensure program quality. At graduation, the program will request job placement data, including the name and address of employers. Because many graduates stay at their current employment site, this information will be relatively easy to track. Appendix M contains drafts of the proposed program surveys. Based on the experience of the UMSL School Psychology Program, which is comparable in size to the ABA Program, we anticipate response rates of 70% or higher from alumni and employers.

5.H. Plans for Accreditation

Dr. Andresa De Souza has submitted the proposal curriculum changes to the ABAI to align with the new standards for certification. Please see the previously discussed letter of approval, April 2020, in Appendix F. This association approves course sequences that enable graduates to sit for the BCBA examination; however, it also approves programs via accreditation. It is our intent to pursue accreditation once the new degree is approved. The UMSL College of Education has a long and impressive history of successful accreditation, including recognition by the National Council for the Accreditation of Teacher Education, Council for the Accreditation of Counseling and Related Programs, and National Association of School Psychologists.