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March 21, 2019

Dr. James D. Fielder, Jr.
Secretary of Higher Education
Maryland Higher Education Commission
6 North Liberty Street
Baltimore, MD 21201

Dear Secretary Fielder:

Maryland University of Integrative Health (MUIH) seeks approval for the enclosed new program, the Master of Science in Herbal Product Design and Manufacture, beginning in Fall 2019. This program will replace MUIH's current Master of Science in Therapeutic Herbalism, Herbal Product Design area of concentration. This is a new program area for MUIH.

Please don't hesitate to contact me should you require additional information in considering this proposal.

A handwritten signature in black ink, appearing to read "Christina M. Sax".

Dr. Christina M. Sax
Provost and Vice President for Academic
and Student Affairs

cc: Marc Levin, President and CEO, MUIH

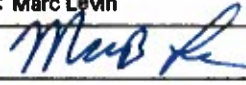


**Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program**

Institution Submitting Proposal	Maryland University of Integrative Health
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Each action below requires a separate proposal and cover sheet.

- | | |
|---|---|
| <input checked="" type="radio"/> New Academic Program | <input type="radio"/> Substantial Change to a Degree Program |
| <input type="radio"/> New Area of Concentration | <input type="radio"/> Substantial Change to an Area of Concentration |
| <input type="radio"/> New Degree Level Approval | <input type="radio"/> Substantial Change to a Certificate Program |
| <input type="radio"/> New Stand-Alone Certificate | <input type="radio"/> Cooperative Degree Program |
| <input type="radio"/> Off Campus Program | <input type="radio"/> Offer Program at Regional Higher Education Center |

Payment Submitted: <input checked="" type="radio"/> Yes <input type="radio"/> No	Payment Type: <input type="radio"/> R*STARS <input checked="" type="radio"/> Check	Payment Amount: \$850	Date Submitted: 3/21/19
Department Proposing Program	Nutrition and Herbal Medicine		
Degree Level and Degree Type	Master of Science		
Title of Proposed Program	Herbal Product Design and Manufacture		
Total Number of Credits	36		
Suggested Codes	HEGIS: 129950	CIP: 51.3702	
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education (fully online) <input checked="" type="radio"/> Both		
Program Resources	<input type="radio"/> Using Existing Resources <input checked="" type="radio"/> Requiring New Resources		
Projected Implementation Date	<input checked="" type="radio"/> Fall <input type="radio"/> Spring <input type="radio"/> Summer Year: 2019		
Provide Link to Most Recent Academic Catalog	URL: https://www.muih.edu/academics/acader		
Preferred Contact for this Proposal	Name: Christina Sax		
	Title: Provost and Vice President for Academic Affairs		
	Phone: 410-888-9048, ext 8655		
	Email: csax@muih.edu		
President/Chief Executive	Type Name: Marc Levin		
	Signature: 	Date: 3/21/19	
	Date of Approval/Endorsement by Governing Board:		2/6/19

Revised 12/2018

Maryland Higher Education Commission Proposal for New Instructional Program

Master of Science in Herbal Product Design and Manufacture Maryland University of Integrative Health

Maryland University of Integrative Health (MUIH) proposes the creation of a new Master of Science (MS) degree in Herbal Product Design and Manufacture. This 37-credit program will be offered primarily online with two intensive on-campus experiences, and it can be completed in six trimesters. This program will replace the current MS degree in Therapeutic Herbalism, Herbal Product Design area of concentration. This program is scheduled to begin in the fall 2019 trimester, pending approval by the Maryland Higher Education Commission.

A. Centrality to Institutional Mission and Planning Priorities

- 1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.**

The mission of MUIH is: A distinctive community of scholars, researchers, practitioners, and advocates, Maryland University of Integrative Health promotes whole person, relationship-centered healthcare. Through discovery and exploration, we deliver progressive educational programs, advance innovative clinical models, build mutually beneficial partnerships, and provide opportunities for fulfilling careers. The vision of MUIH is: Serving as a leader in the global transformation of health and wellness, we integrate healing traditions and contemporary science, acknowledge the wisdom of the body and nature as a teacher, and focus on the interconnection of mind, body, and spirit. Our work enables people to thrive through the cycles of life.

MUIH is the pre-eminent institution in the U.S. for the study of health and wellness. Its programs integrate healing traditions and contemporary science and acknowledge the wisdom of the body and nature as a teacher to educate diverse and erudite health-care professionals for today and tomorrow. In keeping with its mission and vision, MUIH currently offers graduate programs in areas related to natural health and wellness such as acupuncture, Ayurveda, herbal medicine, health and wellness coaching, nutrition, and yoga therapy. MUIH has been a pioneer and driving force in the national movement toward wellness, disease prevention, and relationship-centered healthcare. As an anchoring academic institution for the emerging wellness system in America, MUIH has trained over 2800 wellness professionals and has a current, annual unduplicated headcount enrollment of 1183 graduate students (fall 2017 IPEDS reporting). Graduates not only help frame the healthcare options in the U.S. and abroad, but also are instrumental in encouraging people to switch to more natural lifestyle choices that improve their overall health and wellness.

The proposed MS Herbal Product Design and Manufacture program is designed to prepare students to apply the principles, practices, and concepts in herbal medicine to the development and implementation of clinical strategies and real-world solutions. Students integrate scientific evidence with tradition and practical herbal experiences for integration into the contemporary healthcare environment. This program will be the only MS Herbal Product Design and Manufacture degree offered in the U.S. This 37-credit program will be offered primarily online with two intensive on-campus experiences of four to five days each. Students will have the option to take some courses

online or on-campus, offering the opportunity for unique learning experiences in MUIH's herbal dispensary and garden. The program can be completed in six trimesters (two years).

This program is designed for individuals with a wide range of interests in the growing herbal supplement industry. Graduates of the program will be poised to contribute as change agents for quality, rigor, and efficacy in diverse areas of the herbal product field. The program is ideal for individuals interested in herbal product development, formulary, sustainable production, quality control, research, education, retail, marketing, and sales.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

The creation of the MS Herbal Product Design and Manufacture program supports MUIH's strategic goals, values and institutional principles. Since its founding, MUIH has positioned itself as a pioneer and advocate for a more natural and relationship-oriented approach to health and well-being. It is helping to lead the transformation of our healthcare delivery system through behavioral changes in consumer self-care, teaching MUIH graduates to become partners in health by educating, facilitating and coaching. The proposed program supports MUIH's strategic goal of becoming the preeminent academic institution serving the health and wellness field by taking a position at the forefront of a growing field in the healthcare industry.

The creation of this program supports goals and objectives in the University's Strategic Goals and the 2018-2019 and 2019-2020 Action Plan:

University Strategic Goals

- Goal 1.O1: Increase awareness, reputation and visibility of the University's academic programs, research initiatives, and clinical offerings.
- Goal G1.O4: Leverage and adapt current academic program offerings to reach new audiences.
- Goal G4.O4: Create alternative revenue streams.

2018-2019 Action Plan

- Action 3D: Launch new and revised academic programs for 2018-2020.
 - Task: Identify and develop new programs that are of use to health and wellness professionals, and are congruent with MUIH's mission, vision, and values.

This program and a companion new MS program replace the existing MS Therapeutic Herbalism degree and its two areas of concentration, which have proven to be successful in garnering new enrollments and alumni employment. The new MS Herbal Product Design and Manufacture (this proposal) and MS Clinical Herbal Medicine (concurrent proposal) continue to complement MUIH's curricular content and career options for graduates by providing more focused learning opportunities and degrees for students than the current MS Therapeutic Herbalism degree. As with all MUIH disciplines, the program model is prevention- and education-oriented, nature-based, community-focused, and relationship-centered with an emphasis on establishing rapport with the client and developing a "healing presence". Consistent with MUIH's mission to deliver innovative solutions for healthier living and career-oriented opportunities for students, the proposed program will continue to advance MUIH's leadership in the emerging wellness system.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation. (Additional related information is required in section L.

This new program replaces a previous version of itself, the MS Therapeutic Herbalism, which has already proven to be successful in garnering new enrollments and sustaining itself; MUIH has garnered a total of 200 new students in this program from academic year 2011-2012 to academic year 2018-2019. Limited new resources are needed to fund and support the new program through its launch and through the first five years of its implementation. Eleven of the thirteen courses in the program already exist, two of these require small to moderate revisions. Only two of the thirteen courses in the program are new courses that requires full development. MUIH will use various strategies which have proven successful in the development and launch of previous new programs at MUIH. During the start-up phase of the program the University will reallocate funds from general operation to support this new program. The program will be administered by existing academic, advising, support services, and administrative staff. Courses in the program will be taught by existing fulltime/salaried and adjunct faculty and supplemented by the hiring of occasional new adjunct faculty when needed. Additional financial efficiencies will be gained through the use of five courses in both of the new companion herbal medicine programs: MS Herbal Product Design and Manufacture (this proposal) and MS Clinical Herbal Medicine (concurrent proposal).

In addition, the University will continue to teach-out students in the existing MS Therapeutic Herbalism program, which is being replaced by the proposed new programs. In preparation for this transition and to ensure responsible budget management MUIH stopped admitting students to the MS Therapeutic Herbalism program in fall 2018. The University did not admit a spring 2019 cohort to minimize the financial impact of balancing a teach out of the pre-existing program with the start of a new replacement program. The balancing of funds to support teach out of the pre-existing program and reallocation of funds to support the new program will not have an adverse impact on existing programs since the University operates with a net surplus sufficient to reallocate the necessary funds to the new program.

4. Provide a description of the institution's commitment to a) ongoing administrative, financial, and technical support of the proposed program, and b) continuation of the program for a period of time sufficient to allow enrolled students to complete the program.

This new program replaces a previous version of itself, the MS Therapeutic Herbalism, which has already proven to be successful in garnering new enrollments and sustaining itself; MUIH has garnered a total of 200 new students in this program from academic year 2011-2012 to academic year 2018-2019. In supporting the previous program, the MUIH dedicated academic, administrative, faculty, and advising personnel, as well as instructional materials and facilities, marketing, recruiting, and additional general student affairs and administrative resources. Such resources have been included in MUIH's budget on an ongoing basis since academic year 2011-2012 and will continue to be included to support the new program. The program will be housed within the existing Nutrition and Herbal Medicine department, and overseen and administered by its existing Chair, Herbal Product Design and Manufacture Faculty Program Manager, Program Administrator, and program curriculum committee. The existing dedicated Academic Advisor from Student Affairs will continue to support students in the pre-existing teach out program as well as students in the new program. The existing budget division

will continue and support the new program, and it will continue to be included in the University's standard annual budget planning process. Courses will be staffed by a combination of existing ranked faculty, as well as existing and new adjunct faculty (see Section I for additional details). This new program will be included in the centralized support provided to all programs by Student and Alumni Affairs, the Library, Information Technology Services, Instructional Design Services, and the Teaching and Learning Center.

MUIH will use its previously successful enrollment management model to launch the MS Herbal Product Design and Manufacture program; this model has been successful in garnering 200 new enrollments in the program being replaced, the MS Therapeutic Herbalism, since academic year 2011-2012. New programs are allowed a minimum of five years to mature and develop an ongoing prospective student funnel. New student enrollment targets have been set based on the enrollment history of the previous version of the new program. MUIH's financial model permits it to run programs with small cohort enrollments, further supporting sustainability of the program in both its early and later years. Any choice to discontinue a program involves collaborative decision making by the academic department, Dean of Academic Affairs, Provost, Admissions office, Marketing unit, Vice President for Finance and Administration, and President. Decisions to discontinue a program have been made rarely and include teach-out plans for enrolled students with extended times to completion given the part time nature of MUIH's programs and the flexibility needed by its non-traditional student population. In the case of the MS Therapeutic Herbalism program being replaced by the proposed new program, students will be provided with a teach out plan that extends to academic year 2021-2022 as well as the option to transfer from their existing MS Therapeutic Herbalism degree into the new MS Herbal Product Design and Manufacture degree.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

1. Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State.

Health Care

Health care costs, and expenditures for health care, are on the rise. The Centers for Medicare and Medicaid Services has projected that health care spending will rise from \$2.9 trillion in 2013 to over \$5 trillion in 2022.¹ In percentage terms, the total expenditures on health care are projected to rise from 17.8% of GDP in 2015 to 19.9% of GDP in 2025.² Expenditures for preventive care, a key component of integrative health, are also increasing. The Federal Reserve Bank of San Francisco observed that "spending for preventive treatment increased at an extremely rapid rate over the [2003 to 2007] period. Growth in the percentage of enrollees getting preventive treatment ... drove half this increase. That indicates people are seeking preventive care at an increasing rate."³

¹ Centers for Medicare and Medicaid Services, "National Health Expenditure Projections 2012-2022," <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2012.pdf>.

² Centers for Medicare and Medicaid Services. "NHE Fact Sheet," last modified 6/14/2017, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet.html>.

³ A. Shapiro, "What's Driving Medical-Care Spending Growth?" Federal Reserve Bank of San Francisco, 2013.

Integrative Health

A key component of a successful preventive health program is the use of complementary and integrative therapies. Integrative and complementary health approaches include an array of modalities and products with a history of use or origins outside of conventional medicine.

Medicine's leading accreditor, The Joint Commission⁴, and the American College of Physicians⁵ have recognized the effectiveness of integrative health practices and have recommended their use to manage pain and mitigate the use of pharmacologic approaches, and in part assist in addressing society's opioid crisis. 2019 reports by the Global Wellness Summit⁶ and Forbes⁷ cite integrative health practices among the top future global wellness trends. A 2013 McKinsey and Company report called the wellness industry "a demographic sweet spot of enormous potential" and calculated this market as close to \$16.5 billion per annum.⁸ Individuals often use integrative health approaches to improve health and wellbeing⁹ or to relieve symptoms associated with chronic diseases or the side effects of conventional medicine.¹⁰ In the U.S., most persons who use complementary health approaches do so to complement conventional care, rather than as a replacement.¹¹

The 2017 National Health Interview Survey revealed significant increases in the use of mind and body approaches that characterize complementary and integrative health approaches.¹² Yoga was the most

⁴ J. Weeks, "The joint commission moves integrative approach ahead of pharmaceuticals for main management", *Integrative Medicine: A Clinician's Journal*, 2015, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4566474/>.

⁵ A. Qaseem, T.J. Wilt, R.M. McLean, M.A. Forciea, "Noninvasive treatments for acute, subacute, and chronic low back pain: A clinical practice guideline", *Annals of Internal Medicine*, 166(7). DOI: 10.7326/M16-2367, 2017.

⁶ Global Wellness Summit, "2019 Global Wellness Trends Report", 2019, <https://www.globalwellnesssummit.com/2019-global-wellness-trends/>.

⁷ J. Sweet, "10 Wellness Trends You Have To Try In 2019", *Forbes*, Jan 4, 2019, <https://www.forbes.com/sites/jonisweet/2019/01/04/top-10-wellness-trends-2019/amp>

⁸ P. Cloos, et al., "Healthy, Wealthy, and (Maybe) Wise: The Emerging Trillion-Dollar Market for Health and Wellness," McKinsey and Company, 2013.

⁹ A.M. McCaffrey, G.F. Pugh, and B.B. O'Connor, "Understanding Patient Preference for Integrative Medical Care: Results from Patient Focus Groups," *Journal of General Internal Medicine* 2007, 22(11):1500–5; and A.M. Greene, et al., "Perceived Benefits of Complementary and Alternative Medicine: A Whole Systems Research Perspective," *Open Complementary Medicine Journal* 2009, 1:35–45.

¹⁰ R.L. Nahin, et al., "Disease Severity Is Associated with the Use of Complementary Medicine to Treat or Manage Type-2 Diabetes: Data from the 2002 and 2007 National Health Interview Survey," *BMC Complementary and Alternative Medicine* 2012, 12:193; and C.B. Lo, R.A. Desmond, and S. Meleth, "Inclusion of Complementary and Alternative Medicine in US State Comprehensive Cancer Control Plans: Baseline Data," *Journal of Cancer Education* 2009, 24(4):249–53.

¹¹ J.A. Astin, "Why Patients Use Alternative Medicine: Results of a National Study," *Journal of the American Medical Association (JAMA)* 1998;279(19):1548–53; also B.G. Druss and R.A. Rosenheck, "Association between Use of Unconventional Therapies and Conventional Medical Services," *JAMA* 1999, 282(7):651–6; and D.M. Eisenberg, et al., "Trends in Alternative Medicine Use in the United States, 1990–1997: Results of a Follow-Up National Survey," *JAMA* 1998, 280(18):1569–75.

¹² National Center for Health Statistics, "Use of Complementary Health Approaches: Adults and Children, 2017", Centers for Disease and Control Prevention, <https://nccih.nih.gov/research/statistics/NHIS/2017/>; also L.I. Black, P.M. Barnes, T.C. Clarke, B.J. Stussman, R.L. Nahin, "Use of yoga, meditation, and chiropractors among U.S. children aged 4–17 years", *NCHS Data Brief*, no 324, National Center for Health Statistics, 2018, <https://www.cdc.gov/nchs/data/databriefs/db324-h.pdf>; and T.C. Clarke, P.M. Barnes, L.I. Black, B.J. Stussman, R.L. Nahin, "Use of yoga, meditation, and chiropractors among U.S. adults aged 18 and over", *NCHS Data Brief*, no 325, National Center for Health Statistics, 2018, <https://www.cdc.gov/nchs/data/databriefs/db325-h.pdf>.

commonly used complementary health approach among U.S. adults in 2012 (9.5%) and 2017 (14.3%) and demonstrated an increase in usage during that five-year period. The use of meditation increased more than threefold from 4.1% in 2012 to 14.2% in 2017. The use of chiropractors increased from 9.1% in 2012 to 10.3% in 2017. Similar increased usage of these modalities was observed in children aged 4-17 years. The percent of children who used yoga increased significantly from 3.1% in 2012 to 8.4% in 2017. The use of meditation increased significantly from 0.6% in 2012 to 5.4% in 2017.

The 2012 National Health Interview Survey conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics demonstrated significant use and spending on integrative health care approaches.¹³ One-third of U.S. adults and nearly 12% of children ages 4 to 17 used complementary health approaches. An estimated 59 million persons aged four years and over had at least one expenditure for some type of complementary health approach, resulting in total out-of-pocket expenditures of \$30.2 billion per year. Out-of-pocket spending for complementary health approaches represented 9.2% of all out-of-pocket spending on health care. Moreover, spending on integrative medicine is expected to increase to \$115 billion by the year 2015.¹⁴

Additional studies point to the growing use of integrative health approaches in health care. A 2010 study conducted by the National Center for Complementary and Alternative Medicine and the American Association of Retired Persons indicated that 50% of Americans age 50 and older reported using complementary and alternative medicine.¹⁵ In 2018, health and wellness coaching emerged as a \$6 billion service market in the U.S., with an estimated 109,000 health coaches and health educators.¹⁶

Traditional health care organizations, employers, and regulators are responding to increased consumer demand for integrative health therapies. A 2007 study by McKinsey and Company report found that 41% of patients' choice of hospital is based on their offerings of "amenities" that included complementary and alternative therapies.¹⁷ A 2007 study by the Bravewell Collaborative indicated that in 1999 only 7.7% of hospitals offered integrative therapies, by 2004 that number had increased to 18.3%, and by 2005 25% of hospitals were offering services in a complementary or integrative fashion.¹⁸ A 2010 study by the Samueli Institute and Health Forum, and American Hospital Association Company, indicated that of the responding hospitals (299), 42% stated that they offered one or more complementary and integrative health therapies in the hospital.¹⁹ The 2007 National Home and Hospice Care Survey conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics found that nearly 42% of hospice care providers offered complementary and

¹³ National Center for Health Statistics, "Use of Complementary Health Approaches in the US: 2012 National Health Interview Survey," Centers for Disease Control and Prevention, <https://nccih.nih.gov/research/statistics/NHIS/2012>; also T.C. Clarke, et al., "Trends in the Use of Complementary Health Approaches Among Adults: United States, 2002-2012," *National Health Statistics Report*, Feb 10 (79): 1-16, 2015; and R.L.Nahin, et al., "Expenditures on Complementary Health Approaches: United States, 2012," *National Health Statistics Report*, June 22 (95):1-11, 2016.

¹⁴ Report Linker, *Alternative Medicine Industry: Market Research Reports, Statistics and Analysis*. <https://www.reportlinker.com/>.

¹⁵ National Center for Complementary and Alternative Medicine, "Complementary and Alternative Medicine: What People Aged 50 and Older Discuss with their Health Care Providers," April 2011.

¹⁶ Marketdata, LLC, "The U.S. Health Coaching Market", May 2018, <https://www.researchandmarkets.com/reports/4649614/the-u-s-health-coaching-market#rela2-4531925>.

¹⁷ K.D. Grote, J.R.S. Newman, S.S. Sutaria, "A better hospital experience", *The McKinsey Quarterly*, 2007.

¹⁸ B. Horrigan, "Integrative Medicine Best Practices: Introduction and Summary." Bravewell Collaborative, 2007.

¹⁹ Samueli Institute and Health Forum, "2010 Complementary and alternative medicine survey of hospitals: Summary of results", 2010, http://www.samueliinstitute.org/File%20Library/Our%20Research/OHE/CAM_Survey_2010_oct6.pdf.

alternative therapies, had a provider on staff or under contract, or both.²⁰ All twenty hospitals on the 2017-2018 US News and World Report America's Best Hospitals Honor Roll offer integrative health care and practices.²¹ Membership in the Academic Consortium for Integrative Medicine and Health grew from 36 traditional and allopathic academic medical schools and centers in 2008, to 70 in 2018.²² In addition, allopathic health care providers are personally using integrative therapies at an increased rate.²³ The spread of integrative health practices in allopathic settings is also demonstrated through the increase of hospitals and other health care organizations approaching MUIH in the last three to five years seeking internship placements for MUIH students.

The increase in integrative health approaches has been driven in part by changes in incentive structures for health care providers under the provisions of the Patient Protection and Affordable Care Act (known as the ACA or Obamacare), the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), and the 21st Century Cures Act of 2016. Briefly, these changes have resulted in awards to health care providers for reducing acute care consumption and impose penalties for inefficient, low-quality care. Integrative and allied health professions play a key role in delivering patient outcomes and support the shift in emphasis from acute to preventive care. Integrative health has been shown to be cost effective and yield savings in more than two dozen studies,²⁴ and in an analysis of research from medical literature, data from corporate wellness programs, and pilot projects at insurance companies.²⁵ Indeed, to succeed in the future, health care organizations will need to shift their workforce from one that prioritizes hiring for in-patient acute care toward new value-based models.²⁶ Professionals in those models will focus on preventive practices, the adoption of healthy lifestyles, consolidated visits and group sessions for education and support, and out-patient care in home and workplace settings.

Collectively, these represent some of the fastest growing occupations and areas of health care expansion in the U.S.²⁷ MUIH's programs, including the MS Clinical Herbal Medicine, prepare individuals to provide such integrative health care.

Herbal Medicine

Consumer use of herbal medicine continues to grow. A 2011 study by the National Center for Health Statistics indicated that the use of dietary supplements is common among the U.S. adult population

²⁰ A. Bercovitz, et al., "Complementary and Alternative Therapies in Hospice: The National Home and Hospice Care Survey: United States, 2007," *National Health Statistics Report* 33, Jan. 19, 2011.

²¹ US News and World Report, U.S. News Hospitals Rankings and Ratings, <https://health.usnews.com/best-hospitals>

²² Academic Consortium for Integrative Medicine & Health, <https://www.imconsortium.org>. And Consortium of Academic Health Centers for Integrative Medicine, <https://www.integrativepractitioner.com/whats-new/all-news/consortium-of-academic-health-centers-for-integrative-medicine/>

²³ P. Johnson, A. Ward, and L. Knutson, "Personal Use of Complementary and Alternative Medicine (CAM) by U.S. Health Care Workers," *Health Services Research* 47 (part 1): 211-227, 2012.

²⁴ P. Herman, et al., "Are Complementary Therapies and Integrative Care Cost-Effective? A Systematic Review of Economic Evaluations," *BMJ Open* 2(5): e001046, 2012.

²⁵ E. Guarneri, B. Horrigan, and C. Pechura, "The Efficacy and Cost-Effectiveness of integrative Medicine," The Bravewell Collaborative, 2010.

²⁶ The Advisory Board, "Build Your Workforce from the Outside-In," 2016.

²⁷ Education Advisory Board, "Health Professions: Capitalizing on Creative Disruption," COE Forum Industry Futures Series, 2017.

and has been growing significantly.²⁸ Over 40% of adults in the U.S. used supplements in 1988–1994 and over 50% used them in 2003–2006. The 2012 National Health Interview Survey indicated that more than 40 million individuals in the U.S. used non-vitamin, non-mineral supplements in 2012, up from 38 million users in 2007.²⁹ In addition, significant increases in the sales of herbal supplements has been seen in recent years.³⁰ In 2017, total U.S. retail sales of herbal supplements surpassed \$8 billion for the first time, reaching nearly \$8.1 billion. Consumer spending on herbal supplements increased 8.5% from 2016 – the strongest sales growth for herbal supplements in more than 15 years. Total U.S. retail sales of herbal supplements have increased every year since 2004, and since that time consumer spending on supplements has nearly doubled. Increasingly, these consumers are reaching out to professional clinicians to help them understand what is safe and effective from the vast array of herbal supplements found in the market. The development of MUIH’s MS Herbal Product Design and Manufacture program parallels this growth and helps to support the growing need for health care professionals who have been trained in the use of this modality.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.

The proposed program will serve the needs of the State of Maryland, consistent with the goals of the Maryland State Plan for Postsecondary Education for 2017-2021.³¹ Given that MUIH is a graduate-only institution its focus is on Maryland’s Success and Innovation goals, rather than the Access goal which emphasizes the K-12 to postsecondary education pathway.

Success: Promote and implement practices and policies that will ensure student success.

Strategy 4: MUIH provides the residents of Maryland with unique access to educational opportunities in the emerging field of integrative health. MUIH is one of the few colleges and universities in the U.S. to focus solely on integrative health and to provide professional education in such fields. The MS Herbal Product Design and Manufacture will be the only such degree offered in the U.S. It will enhance MUIH’s portfolio of programs, build on its existing expertise in integrative health, support the State’s goals of furthering the education of its citizens, and position Maryland as a national leader in the emerging field of integrative health.

Strategy 5: MUIH provides non-traditional students, including adult, part time, working, and veteran and military students with access to graduate level education. MUIH’s programs are offered in a variety of convenient and flexible learning formats that meet the needs of such students. The MS Herbal Product Design and Manufacture program will be offered primarily online, with two intensive

²⁸ J. Gahche, R. Bailey, V. Burt, J. Hughes, E. Yetley, J. Dwyer, M. F. Picciano, M. McDowell, C. Sempos, “Dietary Supplement Use Among U.S. Adults Has Increased Since NHANES III (1988–1994)”, NCHS Data Brief, No. 61, National Center for Health Statistics, 2011, <https://www.cdc.gov/nchs/data/databriefs/db61.htm>

²⁹ National Center for Health Statistics, “Use of Complementary Health Approaches in the US: 2012 National Health Interview Survey,” Centers for Disease Control and Prevention, 2015, <https://nccih.nih.gov/research/statistics/NHIS/2012>; and T.C. Clarke, et al., “Trends in the Use of Complementary Health Approaches Among Adults: United States, 2002–2012,” *National Health Statistics Report*, Feb 10 (79): 1–16, 2015.

³⁰ T. Smith, et al., “Herbal Supplement Sales in US Increased 8.5% in 2017, Topping \$8 Billion”, HerbalGram, Issue 119, pg 62-71, 2018, <http://cms.herbalgram.org/herbalgram/issue119/hg119-herbmktrpt.html>.

³¹ <https://mhec.maryland.gov/About/Pages/2017StatePlanforPostsecondaryEducation.aspx>

on-campus experiences of four to five days each. Students will have the option to take some of their courses in the online or on-campus format.

Strategy 7: MUIH provides the residents of Maryland with unique degrees and certificates that provide direct access to career pathways in the growing health care sector. The field of integrative health is increasingly being recognized by consumers, patients, employers, and conventional medicine as a powerful health care adjunct that provides access to high quality, high impact, and low-cost health care. In this respect, MUIH integrates academic and career advising throughout students' enrollment; provides professional development and employment search services to students and alumni through the Career Center; and offers a variety of co-curricular professional opportunities. The MS Herbal Product Design and Manufacture program has direct applicability to a wide variety health care professions and disciplines and will be incorporated into MUIH's suite of professional, career, and employment services.

Innovation: Foster innovation in all aspects of Maryland higher education to improve access and student success.

Strategy 8: MUIH develops partnerships to support workforce development and improve workforce readiness. MUIH and the MS Herbal Product Design and Manufacture program directly support the goals and work of the Health Department of Howard County, in which MUIH is situated. The Health Department's vision is that of a model community in which health equity and optimal wellness are accessible for all who live, work and visit Howard County. Its mission is to promote, preserve and protect the health of all in Howard County. Among its core values are strategic public health investment and advancing the public health field. In support of our shared goals, MUIH regularly partners with non-profit, community, and health and wellness related organizations in Howard County including the Business Women's Network of Howard County, Community Foundation of Howard County, Community Action Council of Howard County, Horizon Foundation, Howard County Local Health Improvement Coalition, Howard County Community College, Howard County Fire and Rescue, Howard County General Hospital, Humanim, and the Green Farmacy.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State.

1. Market Demand

It is now well established that our nation's health is a social, economic, financial, and behavioral issue of enormous proportions, offering significant opportunities for economic growth and employment. The U.S. Department of Labor and the U.S. Bureau of Labor Statistics (BLS) see the health care and social assistance sector as leading job growth, largely due to an aging population and increased access to healthcare. "The employment of healthcare occupations is projected to grow 18% from 2016 to 2026, much faster than the average for all occupations, adding about 2.4 million new jobs. Healthcare occupations are projected to add more jobs than any of the other occupational groups. This projected growth is mainly due to an aging population, leading to greater demand for healthcare services."³² Maryland's Department of Labor also predicts exceptional job growth in the health care of social

³² BLS, "Occupational Outlook Handbook," updated January 30, 2018, <https://www.bls.gov/ooh/healthcare/home.htm>.

service sector for the decade 2016-2026.³³ Within this sector, the ambulatory health care services industry, which includes a variety of out-patient integrative health care practices, is expected to grow 31% during this period. Taken together, these are an indicator of the increasing importance of health-focused programs and interventions. The growing costs associated with health care and demands on insurance and treatment systems make prevention and early intervention, strategies emphasized by integrative health care practices, even more important for employers.

Herbalists will support the continued projected growth of healthcare occupations in the U.S. Individuals who hold the MS Herbal Product Design and Manufacture degree will support the \$8 billion herbal supplement industry.³⁴ The MS Herbal Product Design and Manufacture program is designed for individuals with a wide range of interests in the growing herbal supplement industry. Graduates of the program will be poised to contribute as change agents for quality, rigor, and efficacy in diverse areas of the herbal product field. The program is ideal for individuals interested in herbal product development, formulary, sustainable production, quality control, research, education, retail, marketing, and sales.

Individuals with graduate education in herbal product design and manufacturing are employed in the natural products and herbal supplements fields in settings such as industry, herbal dispensaries, pharmacies, government agencies, agriculture, and education ranging in size from large to small organizations. Such individuals are employed in a variety of roles including product development, substantiation of product claims, quality control, regulation, retailing, growing, processing, manufacturing, marketing of herbal products, design of educational materials, and research. The BLS provides projected job growth for some of the related occupations. For the period 2016 to 2026, jobs for agricultural and food scientists (7%) and soil and plant scientists (5-9%) are projected to grow at the average rate. Jobs for quality control analysts are projected to grow faster than average (10-14%).

The American Herbal Products Association's³⁵ (AHPA) 2018 survey on members' employment trends indicates strong growth. AHPA's membership represents growers, processors, manufacturers, and marketers of herbal products, with a member profile ranging in size from large to small companies. AHPA member companies indicated their current (2018) hiring in various functional areas: quality assurance 90% of companies), good manufacturing practices (80%), research (75%), formulary (42%), and education (38%). Member companies also indicated their planned hiring for various positions over the next two years: education (83% of companies), scientist (32%), field production (32%), research associate (24%), product development (24%), formulator (14%), sustainability (9%). MUIH's program has been designed to align with these industry functional areas and positions. In addition, AHPA maintains an ongoing robust job board for opening across the U.S.³⁶

The proposed program is being created at an advantageous time. It offers an opportunity not only for new entrants but for existing professionals in workplace settings to acquire an additional area of

³³ Maryland Department of Labor, Licensing and Regulation, "Maryland Industry Projections - 2016-2026 - Workforce Information and Performance", <https://www.dlir.state.md.us/lmi/iandoproj/industry.shtml>.

³⁴ T. Smith, et al., "Herbal Supplement Sales in US Increased 8.5% in 2017, Topping \$8 Billion", HerbalGram, Issue 119, pg 62-71, 2018, <http://cms.herbalgram.org/herbalgram/issue119/hg119-herbmktrpt.html>.

³⁵ American Herbal Products Association, <http://www.ahpa.org>

³⁶ American Herbal Products Association Natural Industry Job Postings & Resumes, <http://www.ahpa.org/Resources/JobBoard.aspx>

expertise. The primarily online format means that the program can reach those workers throughout Maryland and the nation.

2. Educational and Training Needs

The need for graduate herbal medicine programs has been demonstrated by MUIH's enrollment history. Since academic year 2011-2012, MUIH has garnered a total of 373 new enrollments in its Master of Science, Post-Masters Certificate, and Post-Baccalaureate Certificate in herbal medicine programs.

No other college or university in Maryland or the U.S. offers an Herbal Product Design and Manufacture program. The American College of Healthcare Sciences in Oregon offers an online MS Herbal Medicine degree. MUIH is regionally accredited, while ACHS is not. Non-credit clinical herbal medicine programs are offered by a number of schools. Such programs do not provide the same rigor, depth of study, or research base that a Master's degree provides.

3. Prospective Graduates

This MUIH program has differentiating factors that will support its competitiveness in this growing market: the only MS Herbal Product Design and Manufacture program offered in the U.S.; the opportunity for hands on experience and learning in MUIH's herb garden and herbal dispensary; its grounding in MUIH's solid reputation and philosophy; cost; distinctive features of the program experience such as the MUIH's singular and hallmark focus on integrative health, a holistic approach, and healing presence; online and hybrid delivery formats; and the opportunity to concurrently or sequentially cross-train in other integrative health fields at MUIH.

Given the upward trends in the integrative health field and the enrollment history for the previous version of this program at MUIH, the MS Therapeutic Herbalism with the Herbal Product Design area of concentration, the following enrollment projections (based on expected completion of the program in six trimesters) call for modest but solid growth over the first five years. This level of growth is known to be sustainable based on the history of the previous version of this program and MUIH's other programs.

Projected Enrollments for Program*

Year	Trimester	New Students	Continuing Students	Total Students per Trimester	Total Students per Year
Year 1	Fall 2019	13		13	36
	Spring 2020		12	12	
	Summer 2020		11	11	
Year 2	Fall 2020	13	11	24	67
	Spring 2021		22	22	
	Summer 2021		21	21	

Year 3	Fall 2021	15	11	26	73
	Spring 2022		24	24	
	Summer 2022		23	23	
Year 4	Fall 2022	15	13	28	79
	Spring 2023		26	26	
	Summer 2023		25	25	
Year 5	Fall 2023	18	13	31	88
	Spring 2024		29	29	
	Summer 2024		28	28	

*Enrollment Assumptions: New students are admitted into the program during the fall trimester, but not during the spring or summer trimesters. Continuing students have an overall average retention rate of 80%, consistent with that of MUIH's existing programs.

D. Reasonableness of Program Duplication:

No other college or university in Maryland offers an Herbal Product Design and Manufacture program.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

There are no Herbal Product Design and Manufacture programs offered by Maryland HBIs. The proposed program will have no potential impact on high-demand programs at Maryland's HBIs or on the uniqueness and institutional identities and missions of the HBIs.

F. Relevance to the identity of Historically Black Institutions (HBIs)

There are no Herbal Product Design and Manufacture programs offered by Maryland HBIs. The proposed program will have no potential impact on high-demand programs at Maryland's HBIs or on the uniqueness and institutional identities and missions of the HBIs.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

1. Program Development Model

MUIH uses an ongoing and iterative process to identify and research potential new programs. Potential new programs are routinely identified by faculty, academic and administrative leadership, Program Advisory Board members, and external collaborators through an ongoing analysis of trends and career needs in the health care sector and the field of integrative health, and the career pathways and needs of MUIH's students and alumni. Data sources include national and regional career outlook

and projection statistics; professional credentialing trends and requirements; competitive programs at other colleges and universities; the results of student learning outcomes assessment activities in existing programs; the results of periodic academic program reviews; and the results of alumni surveys. The Provost's office leads an annual review of potential new programs and selection of new programs for development in collaboration with the academic leadership, departments, and faculty, and with input from the President's Executive Council, and the advising, admissions, marketing teams. Faculty are responsible for the development of the program learning outcomes, description, requirements, curriculum, courses, student learning experiences, and program assessment plans, in collaboration with academic administrators. These aspects of the program are then reviewed and approved successively by the department curriculum committee, University Curriculum Committee, Provost, Board of Trustees' Academic Affairs Committee, and Board of Trustees.

The herbal medicine department engaged in an analysis of its programs in 2017-2018 with the goals of ensuring a student-centric design, a quality student learning experience, and workplace relevance and alignment of the curriculum. This analysis was informed by various sources. First, the career readiness and employment status of herbal medicine alumni was assessed through a survey of working herbalists in 2014 and all herbal medicine alumni in 2017. Second, the skills, knowledge, and need for herbalists was assessed through phone interviews with two groups of working herbalists – MUIH alumni and non-alumni identified through the American Herbalists Guild. Third, the American Herbal Products Association (AHPA) 2018 survey on herbal product and employment trends was reviewed. Fourth, MUIH's Herbal Design Business Advisory Group provided feedback in 2017-2018 on the previous program curriculum and input on the and new program curriculum with respect to workforce needs, skills, and knowledge; this group includes representation from nationally-recognized industry leaders, federal agencies, and trade associations in the herbal product field. Fifth, the academic department and faculty reviewed the previous program's learning outcomes assessment results, students' clinical placements and professional portfolios, student success and retention rates, program structure, content, and length (credits and time), and enrollment trends. This collective analysis resulted in a redesign of the 45 credit MS Therapeutic Herbalism degree with an Herbal Product Design area of concentration into the proposed 37 credit MS Herbal Product Design and Manufacture degree.

2. Program Description and Requirements

Program Description

The MS Herbal Product Design and Manufacture program prepared students with the skills and knowledge in herbal medicine and scientific practice and research needed to contribute to the growth of the herbal supplement and manufacturing field with an understanding of product development. Students develop expertise combining the abilities of medicinal plant researcher and an herbalist with that of a medicine maker. Students will be able to engage with existing companies or as entrepreneurs in multiple roles, providing quality assurance, research, product development and Federal regulatory guidance. Topics include botany, medicine making, botanical safety, research, quality assurance, Good Manufacturing Practices (GMP), analytical chemistry, phytochemistry, Structure/Function claims, and New Dietary Ingredient (NDI) claims. Students will have the opportunity for hands-on herbal identification and harvesting through field experiences, unique learning opportunities through MUIH's herbal dispensary and garden, practical and applied learning through an internship experience, and mentor guided, hands-on learning from a distance, with active involvement and feedback from both students and faculty. In addition, students will engage in scholarship, learning to think experimentally, to ask penetrating questions and to develop innovative solutions for the

challenges faced by the herbal dietary supplement industry. Class groups are personal and rely on developing team skills necessary for working collaboratively in a fast-paced and creative field.

Program Outcomes

Upon completion of this program, students will be able to:

- Summarize and synthesize traditional knowledge, pharmacological, and clinical data to make an informed decision about the application of herbal formulas.
- Evaluate and analyze traditional knowledge to bridge the information gap of evidence-based data to make rational decisions in developing safe and effective herbal products and formulas.
- Determine safety concerns of herb-herb and herb-drug interactions for herbal product users.
- Investigate and develop rationale extraction design of herbal products.
- Establish and integrate knowledge of raw materials, formulation, Quality Assessment (QA) and Good Manufacturing Practice (GMP) in developing herbal products.
- Develop and apply analytical techniques to evaluate the quality and identify of botanical ingredients used in commercial products.

Program Requirements

The program consists of 37 credits of the following required courses, taken in six trimesters.

Trimester	Course	New or Revised	Format
1	HRB600 Fundamentals of herbal Medicine (3 cr) (*)		Online or on-campus course
	HRB641 Safety of Botanical Medicine (3 cr) (*)		Online course
2	HRB622 Herbal Pharmacy: Evaluating and Manufacturing Quality Herbal Products (3 cr) (*)		Online or on-campus course
	HRB605 Materia Medica I (3 cr) (*)		Online course
3	ISCI522 Foundations in Organic Chemistry (3 cr)		Online course
	HRB636 Botany Intensive: Exploring Sustainable Supply Chains (3 cr)	Revised	Hybrid course - online & a 4-5 day on-campus intensive experience
4	HRB705 Materia Medica II (3 cr) (*)		Online course
	HRB656 Phytochemistry, Pharmacology and Introduction to Analytical Methods (3 cr)	Revised	Online course
5	HRB690c Internship (1 cr)		Online course
	HRB653 Extraction, Analytical Methods, and Formulation Strategies (3 cr)	New	Online course
	HRB642 Dispensary Practices and Quality Assessment of Herbal Medicine (3 cr)		Hybrid course - online & a 4-5 day on-campus

			intensive experience
6	HRB781 Research in Botanical Pharmacognosy (3 cr)	New	Online course
	HRB794 Case Studies in Herbal Product Design (3 cr)		Online course
* Five courses are shared by the MS Herbal Product Design and Manufacture program (this proposal) and the MS Clinical Herbal Medicine program (concurrent proposal): HRB600 and HRB641 in trimester 1 of both programs; HRB622 and HRB605 in trimester 2 of both programs; and HRB705 in trimester 4 of both programs.			

Course Descriptions

Course descriptions are provided in Appendix A.

3. Student Learning Assessment and Achievement

Student learning achievement and outcomes assessment is governed by each programs’ comprehensive Academic Assessment Plan. Such Plans include program and course learning outcomes established during the initial development of the program and courses, respectively. The Plans include a five-year schedule for the assessment of particular program learning outcomes and University Learning Outcomes, in specific courses or activities, and via specific assessment methods. The Plans also include avenues for the use of assessment results for program and course improvement. Such avenues include ongoing department, faculty, and program curriculum committee meetings; University Curriculum Committee, Learning Outcomes Assessment Team, and Institutional Assessment Committee meetings; the formal course development and redevelopment cycle; the five-year Academic Program Review cycle; and faculty development initiatives. Annual Assessment Reports are prepared by each program and they include an analysis of student learning outcomes assessment and how such results will be or have been used to improve the curriculum and instruction. These annual reports are reviewed by the Provost, Dean of Academic Affairs, and the Institutional Assessment Committee as a part of institutional assessment and planning activities. Student learning outcomes and achievement are also included in the five-year comprehensive Academic Program Review process.

The academic departments, programs, and curriculum committees, subject matter experts (SMEs), and faculty are responsible for designing, delivering, and assessing learning outcomes. They are supported by the Learning Outcomes Assessment Team (LOAT), which serves as an umbrella committee to guide and facilitate academic assessment initiatives, and the University Curriculum Committee. Additional support is provided by the Assistant Provost for Academic Assessment and Accreditation, Dean of Academic Affairs, Provost, and Institutional Assessment Committee in gathering, interpreting, documenting, and using assessment results.

4. Specialized Accreditation or Graduate Certification Requirements

Not applicable

5. Program Oversight

Oversight of the program will be provided by the faculty listed in Appendix B. This includes the Chair of the Nutrition and Herbal Medicine department, the Herbal Product Design and Manufacture Faculty Program Manager, and adjunct faculty with expertise in herbal medicine.

6. Program Information for Current and Prospective Students

Multiple means are used to provide current and prospective students with clear, complete, and timely information on the curriculum, course and degree requirements, policies, the nature of faculty/student interaction, assumptions about technology competence and skills, technical requirements, the learning management system, the availability of academic support services and financial aid resources, and costs and payment policies. These include:

Publicly Available to Prospective and Current Students

- Student Consumer Webpage: <https://www.muih.edu/admissions/student-consumer-information>
- Admissions: <https://www.muih.edu/admissions>
- Academic Catalog: <https://www.muih.edu/academics/academic-catalog>
- Academic Program Webpages: <https://www.muih.edu/academics>
- Academic Policies (Transfer and Exemption, Satisfactory Academic Progress, Attendance, Leave of Absence, Withdrawal Process): <https://www.muih.edu/admissions/student-consumer-information>
- Office of the Registrar: <https://www.muih.edu/academics/office-registrar>
- Disabilities Services: <https://www.muih.edu/disabilities-services>
- Technology Requirements: <https://www.muih.edu/academics/online-learning/technical-requirements>
- Learning Management System: <https://www.muih.edu/academics/online-learning/technical-requirements> and <https://learn.muih.edu/courses/7%20>
- Financial Aid Resources: <https://www.muih.edu/admissions/financial-aid>
- Program Costs: <https://www.muih.edu/admissions/tuition-fees> and <https://www.muih.edu/cost-attendance>
- Payment Policies: <https://www.muih.edu/admissions/tuition-fees> and <https://www.muih.edu/admissions/financial-aid>
- Career Center: <https://www.muih.edu/career-services/career-center>

Password Protected Resources Available to Current and Confirmed New Students

- Full set of Administrative and Academic Policies
- Student Handbook
- Program Plans of Study
- Online New Student Orientation
- Program-Specific Student Community Site
- Student Affairs Community Site (advising, student success, disabilities support, career center)

H. Adequacy of Articulation

Not applicable

I. Adequacy of Faculty Resources

As with many health professions programs where the curriculum calls for expertise across a broad spectrum of theory and practice, and consistent with the model through which MUIH delivers all its programs, the MS Herbal Product Design and Manufacture program will rely on a combination of core salaried faculty and the use of part-time adjunct faculty. Salaried full-time faculty will be strategically placed to anchor the program and provide stability and continuity for students. It is vital that faculty have practical skills and knowledge in the field, generalized experience, as well as specialization in discrete areas that will allow for expert instruction, supervision, and guidance.

Salaried and adjunct faculty are hired and staffed to develop and teach program courses based on the following general criteria. Guest lecturers are subject to the same high standards of education and experience.

- Ph.D., Professional Doctorate, M.S., or other advanced graduate degrees in the related field of the course.
- Professional or academic credentials or experience in herbal medicine, physiology, and/or research
- Qualified to teach graduate courses, and to advise and mentor students.
- Faculty experience in higher education, in didactic, experiential, and/or clinical education.
- Experience developing and teaching courses related to the field.
- Demonstrated commitment to continuing education and professional development.
- Desire to engage in activities for a new program with a strong wellness philosophy at its foundation.
- Research publication and scholarship are preferred but not required.

Appendix B contains a list of representative faculty for the program. All of these faculty currently teach classes at MUIH and/or are academic administrators with teaching responsibilities. Sixty percent of these faculty are core adjunct faculty in the program.

Pedagogical preparation for teaching face-to-face, hybrid, and online courses is provided by the faculty-led Teaching and Learning Center through ongoing opportunities for professional development offered via face-to-face and online trainings, workshops, tutorials, symposia, conferences, and one-on-one consultations tailored to individualized needs. Evidence-based pedagogical best practice resources and guides are provided for faculty on an ongoing and on demand basis through the online Faculty Community Site; such resources and guides are created and provided by in-house, external, and commercially-developed sources. Before beginning their first online or hybrid course development or teaching assignment, MUIH requires faculty to complete the Best Practices in Online/Blended training focused on online pedagogy/andragogy, instructional design principles, the Quality Matters design principles and rubric, the Canvas Learning Management System (LMS) and embedded technology tools and web conferencing training. Faculty who use the Canvas LMS have access to 24/7 support through the Canvas Help Desk.

J. Adequacy of Library Resources

The Sherman Cohn Library's physical space includes the Collaborative Commons, which serves as a space for individual and group learning, researching, interacting and engaging in collaborative work, and use of computers, and a printer/scanner/copier. The Library houses the Physical Collection of carefully selected materials from small presses and mainstream publications in support of the innovative academic programs offered at MUIH. Library Services includes circulation, reference, and research assistance from Library staff members. MUIH provides online support for students and faculty with an enhanced integrated and online library system, and the Library continues to expand to support all modalities of teaching and learning as well as enrollment growth. All online courses contain a direct link to the Sherman Cohn Library at MUIH, prominently positioned in the Canvas online classrooms. The Library conducts the MUIH550 Academic Research and Scholarship non-credit course that is required of all students during their first trimester at MUIH; this course is available online to all students.

The Library has a total collection of over 18,000 titles in health and wellness (13,000 physical holdings and 5,000 electronic). Electronic resources augment the number of health and wellness materials available. The Library's computerized systems and licensing agreements with vendors permit access to open-access journals and other free Internet resources, as well as selected journal articles from individual subscriptions and from the Library's EBSCO host databases. The Library uses the National Library of Medicine's Docline service for document delivery. When the Library does not own an article, it can be obtained in a timely manner for faculty and students through the Library's use of Docline.

The adequacy of library resources to support academic programs is ensured through a number of measures. The Library Reports to the Provost and Library leadership is a member of the standing University Leadership Council. In addition, Library leadership is a member of the Faculty Senate's Information, Research, and Scholarship subcommittee and the Library engages faculty and the academic departments in the regular and periodic review of the Library's collection.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment

MUIH's 12-acre campus contains a 32,500 square-foot, two-story building, herbal medicine teaching garden, parking for all students, and ample space for additional buildings to be built in order to accommodate growth. Over 300 people can be accommodated in the current building's large event space, which totals 2,750 square feet. The current building serves as the primary home for all of MUIH's programs, and includes eight classrooms and a ninth, multipurpose space; a library and quiet study room; 22 clinical treatment rooms and an herbal dispensary, assigned to the Student Teaching Clinic; a Student Affairs suite consisting of academic advising, a Student Success Center, and a Career Center; a student lounge with an adjacent kitchen; and a bookstore/café that includes seating. Offices for general administration of the University and faculty are located at the current campus locations. Other space is available and leased in Howard County as needed, for overflow office and classroom needs. All classrooms have access to voice and data communications and WiFi is available throughout the building. Two large, dividable classrooms are equipped with ceiling-mounted data projectors and screens, as well as an integrated sound system. A portable sound system, TV, laptops, and overhead and LCD projectors are available for use in classrooms as needed. Since the program will be delivered primarily online, these physical instructional and support spaces will not be affected except inasmuch as students may use them during the two weekends they are on campus for class

meetings and may wish to otherwise use them and concurrently enroll in other programs offered on campus.

All students are served by the current infrastructure including remote and online access to admissions, financial aid, registrar, library, advising, student success, disabilities support, counseling, career, IT support, and student account services, an online University Wide Orientation, and online Program Community Sites. The Student Success Center provides individualized academic and non-academic success support to students who are either self-directed or referred by faculty. Such services include writing and scientific tutoring, study skills, academic success strategies and planning, and disabilities support and counseling services. The Career Center provides individualized and group services focused on career development and employment search, as well as a job board. Each department maintains a Program Community Site in the Canvas LMS for all students enrolled in its programs. These sites contain learning resources that cut across the program, access to selected online course learning modules, and resources that assist students in their study and practice for national licensing exams.

All students are provided Office 365 accounts, including access to an institutional electronic mailing system. IT support for electronic mail, Office 365 functions, the Student Information System, and other technologies is available to all students remotely. MUIH has licensed the Canvas Learning Management System (LMS) and embedded technology and web conferencing tools. All students have access to the Canvas LMS and 24/7 support through the Canvas Help Desk, and online tutorials and guides. These and other technologies have the capacity to scale with additional enrollments with little to negligible budgetary impact.

L. Adequacy of Financial Resources with Documentation

1. Table 1: Resources and Narrative Rationale

TABLE 1: RESOURCES					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition/Fee Revenue (c + g below)	\$213,330	\$219,414	\$260,460	\$268,020	\$331,020
a. Number of F/T Students	0	0	0	0	0
b. Annual Tuition/Fee Rate	\$0	\$0	\$0	\$0	\$0
c. Total F/T Revenue (a x b)	\$0	\$0	\$0	\$0	\$0
d. Number of P/T Students (new students each year)	13	13	15	15	18
e. Credit Hour Rate (credits/student/year) (new students each year)	18	18	18	18	18

f. Annual Credit Hour Tuition/Fee Rate	\$870/credit \$250 fee/ trimester	\$896/credit \$250 fee/ trimester	\$923/credit \$250 fee/ trimester	\$951/credit \$250 fee/ trimester	\$980/credit \$250 fee/ trimester
g. Total P/T Revenue (d x e x f)	\$213,330	\$219,414	\$260,460	\$268,020	\$331,020
3. Grants, Contracts & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$0	\$0	\$0	\$0	\$0
TOTAL (Add 1 – 4)	\$213,330	\$219,414	\$260,460	\$268,020	\$331,020

Revenue Narrative

- The enrollment assumptions for years 1 through 5 are 13, 13, 15, 15, and 18 new students, respectively, as shown in section C3. The projected intake reflects the enrollment history of the previous program that the proposed program is replacing.
- Tuition rates reflect the per credit rate for FY20 in Year 1, and 3% increases each year for Years 2-5.
- There is a flat University Fee of \$250/trimester.
- Students will complete all 6 credits per trimester and 18 credits per year, based on the program design.
- There are no reallocated funds, grants, contracts, or other internal or external sources of revenue associated with the program.

2. Table 2: Program Expenditures and Narrative Rationale

Table 2: EXPENDITURES					
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Total Faculty Expenses (b + c below)	\$22,140	\$22,806	\$23,490	\$24,192	\$24,912
a. #FTE NOTE: #Credit Course Assignments (adjunct and salaried)	18	18	18	18	18
b. Total Salary NOTE: Based on MUIH starting mid-point adjunct compensation rate.	\$22,140	\$22,806	\$23,490	\$24,192	\$24,912
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
2. Total Administrative Staff Expenses (b + c below)	\$10,080	\$10,382	\$10,694	\$11,015	\$11,345
a. # FTE	0.07	0.07	0.07	0.07	0.07
b. Total Salary	\$8,400	\$8,652	\$8,912	\$9,179	\$9,454
c. Total Benefits	\$1,680	\$1,730	\$1,782	\$1,836	\$1,891
3. Total Support Staff Expenses (b + c below)	\$4,620	\$4,759	\$4,902	\$5,050	\$5,201
a. # FTE	0.07	0.07	0.07	0.07	0.07

b. Total Salary	\$3,850	\$3,966	\$4,085	\$4,208	\$4,334
c. Total Benefits	\$770	\$793	\$817	\$842	\$867
4. Equipment	\$0	\$0	\$0	\$0	\$0
5. Library	\$0	\$0	\$0	\$0	\$0
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses (Course development, marketing, overhead)	\$17,335	\$25,112	\$16,022	\$16,314	\$17,865
TOTAL (Add 1 - 7)	\$54,175	\$63,059	\$55,108	\$56,571	\$59,323

Expenditures Narrative

- Faculty will teach 6 credits per trimester, and 18 credits per year, based on the program design.
- Faculty salaries are based on MUIH's starting mid-point adjunct per credit compensation rate.
- There are no benefits paid to adjunct faculty.
- Direct administrative staff are projected to spend 7% of their time dedicated to this program. The salary and benefits reflect prorated annual amounts.
- Direct support staff are projected to spend 7% of their time dedicated to this program. The salary and benefits reflect prorated annual amounts.
- There are no new library expenditures planned to support the program, as existing herbal medicine resources are already available.
- There are no new or renovated equipment or space expenditures associated with this program.
- Other expenses include:
 - New course development: \$6,000 in Year 2
 - Course revision: \$1,500 in Year 1, \$1,500 in Year 2
 - Academic Program Review: \$1,000 in Year 5
 - Marketing: \$5,000 per year, for all five years
 - Overhead: 25% on all direct expenses

M. Adequacy of Provisions for Evaluation of Program

Assessment System: Assessment and evaluation of programs is conducted through a multi-faceted approach. The academic departments, programs, and curriculum committees, subject matter experts (SMEs), and faculty responsible for designing, delivering, and assessing learning outcomes are the primary drivers of assessment and evaluation of the program. They are supported by the Learning Outcomes Assessment Team (LOAT), which serves as an umbrella committee to guide and facilitate academic assessment initiatives, and the University Curriculum Committee. Additional support is provided by the Assistant Provost for Academic Assessment and Accreditation, Dean of Academic Affairs, Provost, and Institutional Assessment Committee in gathering, interpreting, documenting, and using assessment results.

Academic Assessment Processes: Student learning outcomes assessment is governed by each programs' comprehensive Academic Assessment Plan. Such plans include program and course learning outcomes established during the initial development of the program and courses, respectively. These outcomes, the methods and timeline for their assessment, and use of assessment results for program and course improvement are part of the program's comprehensive assessment

plan. The Annual Assessment Reports prepared by each program and the comprehensive five-year Academic Program Review process include an analysis of student learning outcomes assessment and how such results have been used to improve the curriculum and instruction. Academic Assessment Plans, Annual Assessment Reports, and Academic Program Reviews are developed and executed by the faculty in each program, and reviewed by the Provost, Dean of Academic Affairs, and the Institutional Assessment Committee as a part of institutional assessment and planning activities.

Course Design: Centralized course design and development is guided by the Quality Matters rubric to ensure alignment of the stated course learning outcomes, assessments, activities, and instructional materials and resources. (Further details on assessment and evaluation in online courses are provided in Appendix C.) Faculty use an institutional master Syllabus Template to prepare their classes each trimester, and this template includes course learning outcomes and the alignment framework.

Student Retention: Student retention rates are calculated, monitored, and reported on an ongoing basis using an automated reporting system developed by the IT unit drawing upon course completion and student status stored in the Student Information System. This information is reviewed on a regular and periodic basis by the Provost, Dean of Academic Affairs, Associate Provost for Student and Alumni Affairs, Retention Committee, and Enrollment Management Committee.

Student Satisfaction: First, the IDEA Student Rating of Instruction tool and Campus Labs online platform are used by students to evaluate courses and faculty at the end of every trimester. IDEA is a nonprofit organization whose mission has been to provide assessment and feedback systems to improve learning in higher education. The IDEA tool meets the needed and desired criteria for a sustainable course evaluation system that was previously identified by the Learning Outcomes Assessment Team. Further, the IDEA system is based on 26 years of research and allows the institution to compare faculty performance within similar disciplines and among over 400 other universities. Second, the Provost holds program-specific Open Forums for enrolled students throughout the academic year. The feedback gathered during these sessions is used by the academic departments and faculty to make improvements in curriculum, instruction, and program administration. Third, periodic customer service surveys are conducted centrally for student-facing units such as the Library, Registrar's office, advising, Career Center, and Student Success Center.

Faculty Feedback and Evaluation: Faculty are evaluated annually by their department chair. Salaried faculty are evaluated against the annual teaching, research/scholarship, and service requirements specified in institutional policy. Adjunct faculty are evaluated based on teaching activities only. The results of IDEA course evaluations are used as a measure of teaching effectiveness. A Faculty Peer Review system provides salaried and adjunct faculty with formative and constructive feedback to improve their pedagogy. Faculty satisfaction and needs analysis are assessed through the annual Employee Satisfaction Survey and the periodic Faculty Professional Development Survey.

Cost-Effectiveness: The revenue-to-expense ratio of each academic program and academic service department is calculated at the end of each trimester. These ratios are reviewed by the President, Vice President for Finance and Administration, Provost, Dean of Academic Affairs, and academic department chairs and used to manage current year academic department budgets and plan for future years' budgets.

N. Consistency with the State’s Minority Student Achievement Goals

MUIH seeks qualified applicants who have the maturity, commitment, and preparation necessary to take full advantage of the specialized studies offered in each of its programs of study. MUIH is committed to being, communicating, and educating in ways that recognize and honor the full range of human diversity. Each student, faculty, staff, and Board member strives to use language and manifest behavior that promotes inclusiveness and cultivates a positive learning community. Further, each student and faculty, staff, and board member is responsible for creating an atmosphere that supports all in growth and movement toward inclusiveness and the appreciation of diversity. MUIH is committed to broadening the diversity of student body, staff, administration, and Board members.

MUIH is an equal opportunity institution. Applicants for admission, employment, and financial aid are considered based on individual merit. No person is excluded from participation in, denied the benefits of, or subject to discrimination in any program or activity of MUIH on the basis of race, color, national or ethnic origin, gender, gender identity, sexual orientation, marital status, pregnancy, age, religion, disability, or any other characteristic protected by law. MUIH does not specifically recruit or advertise to any race, color, national or ethnic origin, gender, gender identity, sexual orientation, marital status, pregnancy, age, religion, or disability group; however, we find that the nature of our programs draws students from all races and backgrounds and countries.

O. Relationship to Low Productivity Programs Identified by the Commission

Not applicable

P. Adequacy of Distance Education Programs

At MUIH, online courses are considered to be those in which 100% of the teaching and learning process is conducted at a distance, while blended courses are those in which a significant portion of face-to-face instruction is replaced by online or other means of digitally enhanced teaching and learning. The proposed program will be offered primarily online. MUIH has successfully offered fully online courses and programs since 2013, as approved by both the Maryland Higher Education Commission and the Middle States Commission on Higher Education. Thus, MUIH is well versed in supporting teaching and learning via online and digitally enhanced modalities, and its principles and practices align with MHEC’s Principles of Good Practice for Distance Education and comply with C-RAC’s guidelines. These principles and practices will be incorporated into the design and delivery of the MS Clinical Herbal Medicine program.

Appendix C provides a full description of how this program and others at MUIH comply with the Principles of Good Practice for Distance Education of MHEC and C-RAC.

Appendix A Course Descriptions

HRB600 Fundamentals of Herbal Medicine (3 credits)

This survey course looks at the historical and modern use of herbal medicine around the world, exploring how traditional systems influence modern herbal practice in the United States. The course reviews traditional rationale for herbal use as well as the foundational modern sciences that support a contemporary evidence-informed perspective. Classroom work will introduce materia medica, phytochemistry, pharmacology, ethnobotany, clinical trials, posology (the study of dosage), herbal preparations, and safety issues. Students will learn how to apply foundational knowledge to the formulation of simple herbal blends.

HRB 605 Materia Medica I (3 credits)

To provide a working understanding of the individual characteristics of at least 50 primary herbs commonly used by the US public. Secondly, to develop skills in integrating information concerning the efficacy and safety of herbs from scientific literature with traditional herbal knowledge.

HRB 622 Herbal Pharmacy: Evaluating and Manufacturing Quality Herbal Products (3 credits)

This is primarily a hands-on course providing techniques for harvesting and drying herbs and incorporating them into herbal products and medicinal foods. It provides the basic theory and skills required to manufacture high-quality medicinal herb products for oral and topical application. Students learn the foundational principles of extraction, the properties of common solvents (e.g. water, alcohol and oils) and the solubility of various herbal constituents. Students apply their learning by creating herbal foods and extracts for display at a community herbal products show (or online equivalent). In addition to making their own "kitchen pharmacy" preparations, students learn how to evaluate the quality of the wide range of herbal products manufactured by the natural products industry.

HRB636 Botany Intensive: Exploring Sustainable Supply Chains (3 credits) REVISED COURSE

The purpose of this course is to extend the basic skills in the identification of wild and cultivated medicinal plants; to gain an understanding of the importance of wilderness areas; and to appropriately gather and process plants in the field. This course immerses students in the relationship between herbal medicine and the natural environment with its inherent biological diversity. Students deepen their understanding of the herbal raw material supply chain and bioregional variation in specific plant material. Students perform field-work, observing and ethically collecting medicinal plants from a wild habitat. They create voucher specimens and begin the field processing of medicinal plant material.

HRB 641 Safety of Botanical Medicine (3 credits)

Students will apply skills, principles, and knowledge to critically examine the safety of herbal products, including basic toxicology, pharmacokinetics and pharmacology necessary to analyze the potential acute, chronic, or idiosyncratic toxicities, as well herb/herb and drug/herb interactions. In addition, each week, students will determine the myth or reality of a safety scenario through peer discussion. Students will examine a case study with toxicity concerns and determine their plan of action through the application of materials and concepts both provided and discovered.

HRB642 Dispensary Practices and Quality Assessment of Herbal Medicine (3 credits)

This course develops the ability of the student to identify and evaluate the authenticity and quality of raw herbal material using organoleptic analysis, microscopic and macroscopic identification, and interpretation of assay and spec sheets. Additionally, chromatographic analysis dispensary practices are introduced.

Opportunities to extend dispensary training are available within the Internship course. This course combines analytical rigor of quality control with the whole-system aspects of quality assurance in an industry context.

HRB653 Extraction, Analytical Methods, and Formulation Strategies (3 credits) NEW COURSE

In this experiential course, students investigate rationale strategies for the extraction of herbal products. Topics covered include: lipid properties; thickeners; stabilizers and carriers; what form should product take - teas, powders, or extracts; masking strong flavors; demulcents; pH effects on solubility; dosing - traditional vs. herbal product. The course introduces students to different forms of analytical methods used in herbal manufacturing and to choosing methods fit for purpose. Students review Good Lab Practices, learn to set analytical specifications, write specification ranges, communicate with analytical labs, analyze lab reports and learn to decide when and why more complex methods, such as DNA analysis, might be required. Woven throughout the course are formulation processes incorporating extraction and analytical methods, which faculty and peers will review.

HRB656 Phytochemistry, Pharmacology and Introduction to Analytical Methods (3 credits) REVISED COURSE

In this course, students learn a unique version of pharmacology - one that emphasizes traditional classifications based on energetics, modern pharmacological principles and understanding the chemical structure of the active constituents in herbal medicines by how they are detected using analytical methods. Understanding plant chemistry provides some underpinning of the student's therapeutic knowledge by linking the beneficial clinical applications of herbs to classes of chemical compounds responsible for the effects. It also provides a rationale for choice of methods in the preparation of herbal medicines. In addition to the standard principles, we will cover less conventional aspects of pharmacology including the concepts of synergy and hormesis, along with new frontier sciences such as pharmacogenomics and systems biology.

HRB690c Internship (1 credit)

The internships can take place in a variety of ways to explore multiple areas in the field of herbal medicine, including research application of herbal medicine; herbal product manufacturing elements, including growing/wildcrafting, QC and QA; or herbal education projects. Students with access to campus have options in the MUIH dispensary, gardens, local companies or practitioners, or working on faculty research projects. Any external organization a student wishes to intern with must be pre-approved by the academic director.

HRB705 Materia Medica II (3 credits)

The purpose of this course is to help students develop further their relationship with individual herbal remedies and help them evaluate the differences between herbs used in similar therapeutic scenarios. Learning will center on the development of narrative tools to "tell the story of" the medicinal use of the plant. The course will also emphasize botanical classification, parts used, pharmacological properties, dosage, safety issues and formulation for a core group of herbal remedies.

HRB781 Research in Botanical Pharmacognosy (3 credits) NEW COURSE

This course allows students to experience product development research in collaboration with the garden and the dispensary. The training in Botanical Pharmacognosy takes place in four phases: 1. Literature review of production attributes - chemical ecology of medicinal plants, processing, identify of active and necessary fractions, matrix effects, solubility, extract concentration, organoleptic and analytical measurement of actives; 2. Literature review of strength of evidence for identified phytochemical fractions, dosing. Clinical mode of action; 3. Final write up of results for internal justification of the product development and for publication in peer-reviewed journals.

HRB794 Case Studies in Herbal Product Design (3 credits)

The capstone course challenges students problem solving skills in collaboration with a small group of peers. Students work on real world herbal product design problems that originate from industry archives or represent real, current problems faced by a company in the field of herbal manufacturing. The course provides students an opportunity to interact and network with industry experts in strategizing their best solutions. Students are required to present the results of the study to the MUIH herbal community.

ISCI522 Foundations in Organic Chemistry (3 credits)

This course reviews topics in organic chemistry that are relevant to nutrition and health. It is designed to prepare students for future courses in nutritional biochemistry and intermediary metabolism. Topics in the course include atomic structure, chemical bonding, organic functional groups, oxidation/reduction, acid/base chemistry, and an introduction to the macronutrients, micronutrients, and nucleic acids.

Appendix B Representative Faculty

1. Fulltime Ranked/Salaried Faculty

Bevin Clare, MS, CNS, LDN, RH (AHG)

- Professor, Herbal Medicine, and Program Manager, Clinical Herbal Medicine
- Courses: HRB641

Marybeth Missenda, MS, RPh, CNS

- Assistant Professor, Integrative Health Studies, and Program Manager, Integrative Health Studies
- HRB690c

Michael Tims, PhD

- Instructor, Herbal Medicine, and Program Manager, Herbal Product Design and Manufacture
- Courses: HRB641, HRB653, HRB656, HRB781

Kathleen Warner, PhD

- Professor, Nutrition, and Department Chair, Nutrition and Herbal Medicine
- Courses: ISCI522

2. Adjunct Faculty

Kenneth Capps, PhD

- Adjunct Faculty, Nutrition
- Courses: ISCI522

Betsy Costillo, MS, CNS, LDN

- Adjunct Faculty, Herbal Medicine
- Courses: HRB600, HRB605, HRB622, HRB636, HRB705

Joanne Givens, MS

- Adjunct Faculty, Herbal Medicine
- Courses: HRB642

Monica McCollum, MS, LDN, CNS

- Adjunct Faculty, Herbal Medicine
- Courses: HRB794

Andrew Pengelly, PhD, RH (AHG), FNHAA

- Adjunct Faculty, Herbal Medicine
- Courses: HRB605, HRB636, HRB656

Jennifer Swartout, MS

- Adjunct Faculty, Nutrition
- Courses: ISCI522

Appendix C

MUIH and Principles of Good Practice for Distance Education

1. Curriculum and Instruction

(i) A distance education program shall be established and overseen by qualified faculty.

MUIH faculty have Master's, doctoral, or professional degrees and academic, clinical, or practical expertise in the content areas of the courses they are assigned to teach. Online and blended programs are established and overseen through a collaborative process that includes such qualified faculty. Each program is led by an Academic Director or Program Director, who is also a faculty member. Larger programs include faculty positions such as Director of Academic Development and Division Chair, who lead particular academic aspects of their programs. Curriculum committees composed of faculty members exist in each academic department to oversee courses and programs, including those that involve online and blended delivery methods.

A comprehensive program review of each program in the University is conducted every five years, involving program faculty and using internal and external experts. The University Curriculum Committee, which includes representation from the Faculty Senate, provides integrated and institutional oversight of courses and programs, including online or blended offerings.

(ii) A program's curriculum shall be coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.

MUIH's curricula, regardless of delivery format, are designed in consultation with experts in the field, MUIH's qualified faculty, and external environmental scanning and workforce needs analyses to ensure coherence, cohesiveness, and academic rigor. The curriculum, learning outcomes, and academic expectations of faculty and students of a program, regardless of the delivery format, are the same and are overseen and approved by the same program faculty and curriculum committees. They are also overseen by the same University bodies including the University Curriculum Committee, Faculty Senate, Executive Management Committee, and the Board of Trustees.

(iii) A program shall result in learning outcomes appropriate to the rigor and breadth of the program.

Program learning outcomes are developed based on input from MUIH's qualified faculty and academic leaders, consultation with expert professionals in the field, and external environmental scanning and workforce needs analyses. The academic rigor and expectations of programs, regardless of their delivery format, are aligned with the nationally recognized standards specified by the Council of Graduate Schools and the Lumina Foundation's Degree Qualification Profile (DQP). The content, learning outcomes, rigor, depth, and breadth of programs, regardless of their delivery format, are also aligned with external program-specific accrediting and curriculum-guiding bodies, where available. These include the Council on Naturopathic Medical Education (CNME), Council of Chief Academic and Clinical Officers of the Association of Accredited Naturopathic Medical Colleges (AANMC), Accreditation Commission for Acupuncture and Oriental Medicine (ACAOM), Accreditation Council for Nutrition Professional Education (ACNPE), Board for Certification of Nutrition Specialists (BCNS), International Coach Federation (ICF), National Consortium for Credentialing Health and Wellness Coaches (NCCHWC), Certified Health Education Specialist (CHES)

examination of the National Commission for Health Education Credentialing (NCHEC), and International Association of Yoga Therapists (IAYT).

(iv) A program shall provide for appropriate real-time or delayed interaction between faculty and students.

Online and blended courses and programs are delivered using the Canvas Learning Management System (LMS). This platform supports asynchronous interaction between faculty and students through a variety of embedded tools. Faculty and students also have the opportunity for synchronous interaction using the Big Blue Button web conferencing system, which can be directly accessed from the Canvas online classroom.

MUIH develops its online and blended courses according to the “master course philosophy.” For each online and blended course, a master version is developed, with components and activities designed to foster ongoing engagement between faculty and students. These components include online asynchronous discussion forms and synchronous lectures, chats, and office hours. Appropriate asynchronous and synchronous interactions between faculty and students are designed and included in online and blended courses as guided by Standard 4 (Instructional Materials) and Standard 5 (Course Activities and Learner Engagement) of the Quality Matters Rubric.

(v) Faculty members in appropriate disciplines in collaboration with other institutional personnel shall participate in the design of courses offered through a distance education program.

MUIH uses a collaborative team approach to develop its online and blended courses. Faculty subject matter experts (SMEs) design, develop and offer online and blended courses appropriate to the mission and objectives of the program. Faculty SMEs are selected based on their discipline expertise, professional and teaching experience, and their completion of onboarding and training activities for online and blended faculty. Academic and Program Directors, who are also faculty members, lead the course development teams and guide and collaborate with the faculty SMEs.

The Center for Teaching and Learning (CTL) supports the faculty SMEs and academic departments in online and blended course development, and in teaching and assessing the quality of online and blended learning. The Center’s instructional designers, instructional technologists, digital learning specialists, multimedia specialists, and learning management system administrator are collaborative members of the online and blended course development teams. The Center’s Assistant Provost provides oversight and guidance for the course development teams, who are also supported by the Assistant Provost for Academic Assessment and Accreditation.

The University develops its online and blended courses according to the “master course philosophy,” developing and maintaining a master version of each online and blended course. The master version contains certain course components as determined by the University’s academic leadership, including the learning outcomes, a syllabus, content learning modules, reading assignments, key learning objects, and key assessment tools, thus ensuring consistency of delivery of online and blended courses and allowing more precise assessment across various occurrences/sections of online and blended courses. Each instructor of online and blended courses receives a copy of the master course and reviews it to determine whether any edits are necessary. The faculty then make all appropriate edits to the master course, and each instructor supplements the master course with his/her unique teaching materials, including discussion forums and other activities.

2. Role and Mission

(i) A distance education program shall be consistent with the institution's mission.

MUIH's mission is ... "A distinctive community of scholars, researchers, practitioners, and advocates, Maryland University of Integrative Health promotes whole person, relationship-centered healthcare. Through discovery and exploration, we deliver progressive educational programs, advance innovative clinical models, build mutually beneficial partnerships, and provide opportunities for fulfilling careers." All of MUIH's programs, regardless of their delivery method, are aligned with this mission and emphasize innovative and progressive practices and philosophies in the emergent fields of integrative health.

While such programs constitute the foundation and core of MUIH's academic offerings, they are unique among other colleges and universities across Maryland, the Mid-Atlantic region, and the United States. To ensure consistency with the university's mission, new programs are developed according to a process flowchart that emphasizes cross-functional input at early and frequent decision points, from initial exploration to program launch. In addition to faculty, academic program leadership, the Faculty Senate, and program and university curriculum committees, the Executive Management Committee provides a further level of oversight with respect to institutional mission alignment and the impact and integration of the curriculum with student affairs, admissions, marketing, budget and finance, facilities and technology, and legal and compliance issues.

(ii) Review and approval processes shall ensure the appropriateness of the technology being used to meet a program's objectives.

As part of the online and blended course development process, the development team conducts a review of technology needs and potential uses in the course and program. Technologies are selected for inclusion based on their ability to support the achievement of the course learning objectives, alignment with the discipline, and the principles of Standard 6 (Course Technology) and Standard 8 (Accessibility and Usability) of the Quality Matters Rubric.

All online and blended courses are designed with the support of instructional designers, instructional technologists, digital learning specialists, multimedia specialists, and learning management system administrators. These specialists assist faculty and the Academic and Program Directors in identifying and recommending the most effective learning technologies to facilitate and achieve the course's learning objectives. The Academic and Program Directors and the Assistant Provost of CTL use these recommendations to approve the inclusion of particular technologies in particular online and blended courses.

The adoption of new learning technologies across the curriculum is considered by the Academic Leadership Council (ALC) in collaboration with the Director of Information Technology. The ALC is composed of the Provost, all Associate and Assistant Provosts, and all of the Academic and Program Directors, who are faculty members.

3. Faculty Support

(i) An institution shall provide for training for faculty who teach with the use of technology in a distance education format, including training in the learning management system and the pedagogy of distance education.

Faculty developing and teaching online and blended courses are supported by CTL (The Center for Teaching and Learning), which provides both group and one-on-one support. CTL recognizes the central role of teaching and learning at MUIH and its deep commitment to academic excellence. Its activities and initiatives, designed to enhance students' learning experience and support faculty teaching excellence in all disciplines and formats, include: fostering quality and innovation in pedagogical approaches, the meaningful use of technology in teaching and learning, the role of assessment in teaching and learning, the scholarship of teaching and learning, and the application of learning science and research.

CTL comprises an integrated set of units: the digital learning team of instructional designers, instructional technologists, digital learning specialists, and multimedia specialists; the learning management system (LMS) administration team; the faculty onboarding and engagement team; and the faculty professional development team. It is led by an Assistant Provost, who provides oversight for all online and blended course developments and for faculty training and professional development.

Before beginning their first online or blended course development or teaching assignment, MUIH requires faculty to complete the Best Practices in Online/Blended training focused on online pedagogy/andragogy, the Canvas LMS training, Big Blue Button web conferencing training, and one-on-one consultation tailored to their individualized needs, all provided by CTL. These faculty are also provided the Quality Matters Rubric as a guiding resource and access to 24/7 support through the Canvas Help Desk. Faculty developing and teaching online and blended classes also have with ongoing opportunities for professional development through various face-to-face and online webinars, workshops, trainings, and conferences.

(ii) Principles of best practice for teaching in a distance education format shall be developed and maintained by the faculty.

MUIH's principles of best practice for developing and teaching online and blended courses are based on nationally recognized research-based standards, including those of Quality Matters, the Online Learning Consortium (OLC), EDUCAUSE, WICHE Cooperative for Educational Technologies (WCET), National University Technology Network (NUTN), the Middle States Commission on Higher Education, and the Council of Regional Accrediting Commissions (C-RAC). Ongoing opportunities for the dissemination of best practices in online and blended course development and teaching are coordinated jointly by CTL and the Faculty Development subcommittee of the Faculty Senate. Such opportunities include the Annual All Faculty Meeting, the Faculty Explorations Webinar Series, program-specific faculty meetings, and informal faculty peer review, shadowing, and mentoring activities. These activities highlight the best practices of MUIH's faculty teaching online and blended courses in areas such as differential pedagogies for face-to-face, online, blended, and digitally-enhanced teaching and learning; student learning outcomes assessment; strategies that foster student engagement; and the effective use of the Canvas LMS and other learning technologies.

(iii) An institution shall provide faculty support services specifically related to teaching through a distance education format.

Faculty who teach online and blended courses are provided the extensive training and support specifically related to online and blended teaching that are detailed in section 3.i. In addition, they have access to the same support services as faculty who teach face-to-face classes.

Through online and other digital means, CTL's faculty onboarding and engagement team provides support to online and blended course faculty through their transition from recruitment and hiring, to onboarding and orientation, to teaching and university engagement. Faculty teaching online and blended courses have online and other remote access to the university's library, student academic advising office, student academic support office, student information system, Registrar, academic program leadership and support staff, human resources office, and 24/7 Canvas support. Through online and other remote means, faculty teaching online and blended courses have the opportunity to participate in ongoing university activities such as the All Staff, Faculty Senate, and academic program meetings; faculty journal club; academic, administrative, and search committees and working groups; and trainings and professional development activities.

4. Appropriate Learning Resources

(i) An institution shall ensure that appropriate learning resources are available to students including appropriate and adequate library services and resources.

Students enrolled in online and blended courses have online and other remote access to the Library, Student Academic Support office, and Program Community Sites. The University provides online support for faculty and students with an enhanced integrated and online library system, and the Library continues to expand to support all modalities of teaching and learning as well as enrollment growth. The Library's computerized systems and licensing agreements with vendors permit access to online and open-access journals and other free Internet resources, as well as selected journal articles from individual subscriptions and from the Library's EBSCO host databases. The Library uses the National Library of Medicine's Docline service for document delivery. When the Library does not own an article, it can be obtained in a timely manner for faculty and students through the Library's use of Docline. The Library also conducts the MUIH550 Academic Research and Scholarship non-credit course that required of all students during their first trimester at MUIH; this course is available online to all students.

All Canvas classrooms contain a direct link to the Library. In addition, each department maintains a Community Site in the Canvas LMS for all students enrolled in its programs. These sites contain learning resources that cut across the program, access to a selected online course learning modules, and resources that assist students in their study and practice for national licensing exams.

The Student Academic Support office conducts the online University Wide Orientation, which provides an introduction to academic resources. The office also provides individualized academic success support to students who are either self-directed or referred by faculty. Such services include writing and scientific tutoring, study skills, and academic success strategies and planning.

5. Students and Student Services

(i) A distance education program shall provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions

about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.

MUIH's public website (www.muih.edu) and password-protected portal (MyMUIH) provide all students with information regarding their curriculum, course and degree requirements, tuition and fees, payment policies and procedures, financial aid resources, academic advising and support services, and all university academic policies. The website and portal also provide information about online and blended course expectations, technical skills, hardware and software requirements for online and blended courses, and access to the Canvas LMS, tutorials, and 24/7 help desk. These aspects are also provided in the online University Wide Orientation and students' academic program online orientation, both of which are required for new online and blended learning students, as well as students' online Program Community Site. MUIH's online and blended courses are also designed to provide access to such information through the Syllabus and course information, as specified by Standard 1 (Course Overview and Introduction) and Standard 7 (Learner Support) of the Quality Matters Rubric.

(ii) Enrolled students shall have reasonable and adequate access to the range of student services to support their distance education activities.

MUIH's public website (www.muih.edu) and password-protected portal (MyMUIH) provide all students with information regarding student services including registration dates and processes, disability support services, student complaint and grievance processes, graduation and commencement application and review, textbook and instructional material purchasing, as well as all university administrative policies. This information and access are also provided in the online University Wide Orientation and students' academic program online orientation, both of which are required for new online and blended learning students, as well as students' online Program Community Site. MUIH's online and blended courses are also designed to provide access to such information through the Syllabus and course information, as specified by Standard 1 (Course Overview and Introduction) and Standard 7 (Learner Support) of the Quality Matters Rubric.

(iii) Accepted students shall have the background, knowledge, and technical skills needed to undertake a distance education program.

The same admissions requirements and criteria apply to all students in a particular program, regardless of the program's delivery format. Prior to admission, prospective students are invited to participate in open houses, webinars, and interviews to learn about the nature of online and blended courses and to determine whether the online learning environment is suitable to their circumstances and learning style. All new students are required to complete the online MUIH550 Academic Research and Scholarship non-credit course and the online University Wide Orientation, which includes an introduction to the university's academic resources, academic success and planning strategies, and strategies for being a successful online student.

(iv) Advertising, recruiting, and admissions materials shall clearly and accurately represent the program and the services available.

All relevant program information is kept up-to-date on the university's public website (www.muih.edu); print, online, social, and broadcast media; open house presentations and materials; online informational webinar presentations; campus visitation materials; and information tables at off-campus education fairs and conferences.

6. Commitment to Support

(i) Policies for faculty evaluation shall include appropriate consideration of teaching and scholarly activities related to distance education programs.

The criteria for faculty appointment, evaluation, rank, and promotion are the same regardless of the delivery method in which the faculty member teaches. With respect to faculty workload and the number of credits taught annually, online or blended courses are weighted the same as face-to-face instruction. Faculty, including ranked faculty, who teach online or blended courses are eligible and encouraged to participate in scholarly activities, including those related to distance education.

(ii) An institution shall demonstrate a commitment to ongoing support, both financial and technical, and to continuation of a program for a period sufficient to enable students to complete a degree or certificate.

The University's five-year strategic plan includes innovative course and program delivery formats such as online, blended, and digitally-enhanced learning to provide flexible and accessible programs. The university's budget, directly linked to its strategic plan and approved annually by the Board of Trustees, outlines all resource requirements (financial, personnel, administrative, support, compliance, and technical) to maintain and grow. As part of its commitment to the sustainability of online and blended teaching and learning, MUIH maintains a rolling annual online and blended course development schedule. It adheres to the nationally recognized Hallmarks of the Excellence in Online Leadership specified by the University Professional and Continuing Education Association (UPCEA) and the Quality Scorecard: Criteria for Excellence in the Administration of Online Programs specified by the Online Learning Consortium (OLC).

In the event that the University decides to cease admitting students for an academic program, it will ensure that courses continue to be offered to allow students already enrolled in that program to complete their degree or certificate.

7. Evaluation and Assessment

(i) An institution shall evaluate a distance education program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

MUIH administers a standardized online student evaluation process at the end of each trimester for all courses, using the IDEA course evaluation tool and Campus Labs online platform. Individual faculty members may also add course-specific items to the standardized evaluation instrument. Faculty members have access to the results of their student course evaluation results. Academic and Program Directors also have access to the student course evaluation results of the faculty teaching courses in their department/program. The Directors review and discuss these results with faculty on an ongoing basis, and use these results to guide referrals of faculty for additional support, future staffing assignments, and recommendations for appointment, rank, and promotion.

When an online or blended course first launches, the design team continually monitors it, and consults with the instructors and Academic and Program Directors to make adjustments to the course as needed. Academic and Program Directors, in collaboration with faculty in their department/program, review the curriculum, learning objectives, and learning outcome results of all courses, regardless of the delivery format, on an annual basis. Any needed substantive curricular changes are reviewed and approved by the faculty, department curriculum committee, and University curriculum committee. Any needed changes to the online or blended course Syllabus, course structure, learning modules, activities, instructional materials, or assessments are reviewed with CTL, and placed on the university's annual online and blended course development schedule.

Enrollments and retention rates for all programs, specific to each delivery format, and their impact on the university's budget are tracked and analyzed on an ongoing basis by the university's Vice Presidents, Associate Vice President for Enrollment Management, and the Academic and Program Directors. The results of comprehensive exams and projects, clinical evaluations, portfolios, peer-to-peer evaluations, patient outcomes and feedback, licensure examinations, and graduate surveys for all programs, specific to each delivery format, are also tracked and analyzed. The results of all such reports are used to make adjustments as needed in online and blended courses and programs with respect to curriculum, course development, student and faculty support, staffing, library and technology resources, marketing, recruitment and admissions, tuition/fees and budget, new course and program development, and course and program discontinuation.

(ii) An institution shall demonstrate an evidence-based approach to best online teaching practices.

MUIH's principles of best practice for developing and teaching online and blended courses are based on nationally recognized research-based standards, including those of Quality Matters, the Online Learning Consortium (OLC), EDUCAUSE, WICHE Cooperative for Educational Technologies (WCET), National University Technology Network (NUTN), the Middle States Commission on Higher Education, and the Council of Regional Accrediting Commissions (C-RAC). CTL and the academic leadership continually participate in professional development activities to keep abreast of evidence-based approaches in online and blended teaching and learning practices. When appropriate, such opportunities are also provided to faculty. These online and blended teaching practices are then incorporated into faculty, student, and course development practices conducted by CTL, the Faculty Senate, and academic programs.

(iii) An institution shall provide for assessment and documentation of student achievement of learning outcomes in a distance education program.

Online and blended courses are included in the university's overarching academic assessment plan. Expected student learning outcomes are clearly stated centrally and in syllabi at the course and programmatic levels, and are the same for each course regardless of the delivery format of each section of the course. With MUIH's master course philosophy, consistent delivery of certain content and utilization of common key assessment tools allows more precise learning outcomes assessment across various occurrences or sections of the online course. As part of the standard online and blended course design process at MUIH, course assessments are required to be aligned with the stated course learning outcomes, as specified by Standard 2 (Learning Objectives/Competencies) and Standard 3 (Assessment and Measurement) of the Quality Matters Rubric.

The Academic and Program Directors, in collaboration with the Learning Outcomes Assessment Team (LOAT), Assistant Provost for Academic Assessment and Accreditation, and Assistant Provost of CTL

compare attainment of course and programmatic learning objectives by students in online, blended, and face-to-face courses, reporting this data to the Provost to ensure its inclusion in continuous assessment of the University's courses and programs. Any needed changes to the online or blended courses, revealed by learning outcome discrepancies with the face-to-face instances of the same course, are reviewed with CTL, and placed on the university's annual online and blended course development schedule.

Addendum

Maryland Higher Education Commission Proposal for New Instructional Program

Master of Science in Herbal Product Design and Manufacture Maryland University of Integrative Health

Appendix B Representative Faculty

1. Fulltime Ranked/Salaried Faculty

Bevin Clare (fulltime)

- Credentials
 - M.S. Infectious Disease, University of London
 - Certified Clinical Nutritionist, Board for Certification of Nutrition Specialists
 - Registered Herbalist, American Herbalists Guild
 - Licensed Dietitian/Nutritionist
- Professor, Herbal Medicine, and Program Manager, Clinical Herbal Medicine
- Courses: HRB641

Marybeth Missenda (fulltime)

- Credentials
 - M.S. Nutrition and Integrative Health, Maryland University of Integrative Health
 - Certificate in Medical Herbalism, Maryland University of Integrative Health
 - Certificate in Tropical Community Medicine and Health, Liverpool School of Tropical Medicine
 - Certified Clinical Nutritionist, Board for Certification of Nutrition Specialists
 - Registered Pharmacist (RPh)
- Assistant Professor, Integrative Health Studies, and Program Manager, Integrative Health Studies
- Courses: HRB690c

Michael Tims (fulltime)

- Credentials
 - Ph.D. Plant Biology and Chemical Ecology, University of Maryland
- Instructor, Herbal Medicine, and Program Manager, Herbal Product Design and Manufacture
- Courses: HRB641, HRB653, HRB656, HRB781

Kathleen Warner (fulltime)

- Credentials
 - Ph.D., University of Kentucky
- Professor, Nutrition, and Department Chair, Nutrition and Herbal Medicine
- Courses: ISCI522

2. Adjunct Faculty

Kenneth Capps (part-time)

- Credentials
 - Ph.D. Inorganic Chemistry, University of Miami
 - M.Ed. College Teaching, University of New Hampshire
- Adjunct Faculty, Nutrition
- Courses: ISCI522

Betsy Costillo (part-time)

- Credentials
 - M.S. Herbal Medicine, Maryland University of Integrative Health
 - Certified Clinical Nutritionist, Board for Certification of Nutrition Specialists
 - Licensed Dietitian/Nutritionist
- Adjunct Faculty, Herbal Medicine
- Courses: HRB600, HRB605, HRB622, HRB636, HRB705

Joanne Givens (part-time)

- Credentials
 - M.S. Therapeutic Herbalism, Maryland University of Integrative Health
 - M.A. Gastronomy, University of Adelaide
- Adjunct Faculty, Herbal Medicine
- Courses: HRB642

Monica McCollum (part-time)

- Credentials
 - M.S. Herbal Medicine, Maryland University of Integrative Health
- Adjunct Faculty, Herbal Medicine
- Courses: HRB794

Andrew Pengelly (part-time)

- Credentials
 - Ph.D. Food Science, University of Newcastle
 - Registered Herbalist, American Herbalists Guild
 - Fellow National Herbalists Association of Australia
- Adjunct Faculty, Herbal Medicine
- Courses: HRB605, HRB636, HRB656

Jennifer Swartout (part-time)

- Credentials
 - M.S. Nutrition and Integrative Health, Maryland University of Integrative Health
- Adjunct Faculty, Nutrition
- Courses: ISCI522