I. Program Highlights

- North Carolina State University proposes the establishment of a Master of Science in Foundations of Data Science.
- The program will provide students with advanced skills in the components, methods, and tools of data science and their application to a variety of tasks related to knowledge discovery as well as computational and statistical data analysis.
- The rigorous theoretical and mathematical approach offered by the proposed program is distinct from existing data science programs, providing graduates an in-depth understanding of data science as a developing field, as well as its methods and their usage.
- The curriculum’s interdisciplinary and collaborative design aligns with recent studies of the National Science Foundation (NSF) and the American Statistical Association (ASA) and their recommendations to emphasize key areas including database management, statistics, and machine learning.
- Market analyses show North Carolina is among the top 13 states with the greatest demand for data scientists with graduate degrees; the state’s projected growth rate for data scientists over the 2016-2026 timeframe is 16.69 percent. The same study demonstrates that Durham, Orange, and Wake counties account for over 51 percent of the state’s demand.

II. Academic Program Planning Criteria (Section 400.1 of the UNC Policy Manual)

1. Relation to Campus Distinctiveness and Mission.
   The program aligns with NC State’s mission emphasis on science and technology and an integrative approach to problem-solving. It builds upon NC State’s strengths in math, statistics, and computer science and aligns with strategic focus areas of the university. The program’s areas of emphasis parallel those of NC State’s Data-Driven Science Cluster and Data Science Academy, strategic initiatives that also build upon interdisciplinary collaborations between computer science, mathematics, and statistics.

2. Student Demand.
   The target applicant pool is professionals with interests, formal training, and potentially some professional experience, at the intersection of computer science, mathematics, and statistics. Existing NC State master’s programs in the related fields of computer science, math, and statistics have experienced robust enrollment growth through AY 2019-20 (i.e., pre-pandemic) from a total of 765 majors in AY 15-16 to over 1200 majors in AY 19-20. A related offering, NC State’s Data Science executive education certificate, is currently offered by the Computer Science and Statistics departments and enrolls approximately 100 Cisco employees around the world every Spring semester. Interest from a percentage of students in that certificate, which represents a single company in one industry sector, signals that the pool of potential applicants for the proposed degree is significant. Few programs nationwide cater to the pool of students interested in theoretical and interdisciplinary foundations of data science.
3. Employment Opportunities for Graduates.
In recent years, numerous sources have consistently pointed to the growing demand for data scientists and those with skills in related fields that underpin data science.

- In 2016, Glassdoor named *Data Scientist* as the best job in America with a median base salary of $116,840.
- By 2018, McKinsey estimated the US would face a shortage of 140,000-190,000 persons with analytics skills.
- In 2019, the Dice 2020 Tech Job Report identified *Data Engineer* as the fastest growing job in technology, with a 50 percent year over year growth. The same report projected that demand for data science jobs will increase 38 percent over the next decade.
- In 2021, Glassdoor named *Data Scientist* the second-best job in America with a median base salary of $113,736.
- For the period between 2016-2026, the Bureau of Labor Statistics projects above average employment growth for all occupations related to data science; more precisely, they project 30 percent employment growth for mathematicians and software developers and 34% percent for statisticians.

NC State currently has in place a College of Engineering Program Enhancement Fee ($750/semester) that will be applied if this program is approved. NC State is also requesting a program-specific tuition differential for this program equal to the differential currently in place for the existing Master of and MS in Computer Science. If approved, tuition and fees at 2021-22 full-time (9+ credit hour) rates will be as follows:

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<tr>
<th>Category</th>
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<td>Tuition Differential</td>
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<td>Mandatory Fees (Athletics, Student Activities, Health Services, Educational &amp; Technology, Campus Security, Debt Service, ASG)</td>
<td>2,607.60</td>
<td>2,607.60</td>
</tr>
<tr>
<td>Special Fees</td>
<td>1,500.00</td>
<td>1,500.00</td>
</tr>
</tbody>
</table>

Based on experience with existing MS programs in these three fields, NC State estimates that about half of the students who complete this new degree will do so in three semesters, and half will do so in four semesters. This accelerated timeline and anticipated earnings premium represents a fast “return on investment” for students, in addition to other anticipated career-long benefits of a graduate degree. NC State anticipates that institutional, state, and federal financial aid programs are sufficient to support student interest.

5. Expected Quality.
With its strong programs in math, statistics, and computer science, NC State is well positioned to lead the nation in developing unique formal training in data science. The proposed program will provide students with a high quality, nationally competitive educational experience. The interdisciplinary curriculum is organized around seven core courses and three elective courses.
Core courses include two courses each from Computer Science, Mathematics and Statistics; the seventh core course in machine learning may be taken either within Computer Science or Statistics. Students can complete the program either full-time (i.e., in three-four semesters) or part-time, on-campus or online.

6. Faculty Quality and Number.
This program will be supported by over 20 existing tenured/tenure-track and research-active faculty from the Departments of Mathematics, Statistics, and Computer Science. Faculty from these large and nationally recognized departments will introduce students to the latest developments in this fast-developing field through classroom and research interactions. Of note, the 2019 NSF Higher Education Research and Development (HERD) report ranked NC State fifth in the nation in R&D expenditures for mathematical sciences. The Department of Statistics, the largest such department in the country, is currently ranked #16 in the country by US News and World Report.

7. Relevant Lower-level and Cognate Programs.
The proposed interdisciplinary program builds on existing baccalaureate and master’s programs in the three departments collaborating to offer this degree, including data science concentrations within the Statistics and Computer Science master’s programs. While those two disciplinary concentrations differ in nature from the proposed degree, the plan is to terminate those concentrations once the new degree is in place. This will simplify and clarify NC State’s various data science degree options.

8. Availability of Campus Resources (library, space, etc.)
Courses in the proposed curriculum either already exist or are in advanced stages of development; with one exception, all core courses, and most electives, are available online. Online courses, web access and proctoring are handled through NC State’s Digital Education and Learning Technology Applications (DELTA) and Engineering Online services.

The program is not expected to have a significant impact on existing IT infrastructure and services at least for the first few years. Students will access all necessary software through NC State’s site licenses. If enrollment ultimately exceeds expectations, this may need to be re-evaluated.

The existing library infrastructure at NC State is comprehensive and state-of-the-art. The expansive visualization facilities, literature, data collection, and staff of the Hunt and D.H. Hill libraries provide an outstanding environment and resources for study in this field. In addition, inter-institutional library resources are readily available through existing relationships and agreements with other university libraries within the UNC System as well as private institutions, such as Duke University, and will be leveraged in coursework and research projects for this program.

9. Existing Programs (Number, Location, Mode of Delivery).
The most closely related existing programs at other UNC System institutions include: the MS in Analytics at NC State (highly structured and applied 10-month curriculum); the MS in Data Science and Business Analytics at University of North Carolina at Charlotte; the MS in Applied Data Analytics at Appalachian State University, and the MS in Data Science at UNC Wilmington. Enrollments in these programs have grown significantly in the last four years.
Although the number of data science and/or analytics programs is growing to meet demand within the UNC System and nationwide, the proposed program’s emphasis on the theoretical underpinnings of the field fills a unique niche in the state. Market analyses also predict strong demand locally for program graduates, with Durham, Orange, and Wake counties accounting for over 51 percent of the state’s demand for data scientists.

11. Feasibility of Collaborative Program.
The proposed program emphasizes the foundations of the discipline and the development of new analytics tools; related programs at other UNC System institutions are focused on data science application, especially in the business realm. While no opportunities for collaboration have been identified at this time, the potential exists in the future.

III. Summary of Review Processes

The proposal was reviewed by NC State faculty (department and college committees), Administrative Board of the Graduate School, Graduate School, Chief Financial Officer, Provost, Chancellor and Board of Trustees. Approval and support were provided at all levels.

2. UNC System Office Review Process and Feedback. Throughout the review process, NC State provided relevant information to the UNC System Office pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support the statements made.

IV. Recommendation

It is recommended that the Board of Governors approve the North Carolina State University’s request to establish the Master of Science (MS) in Foundations of Data Science CIP 30.3001 effective fall 2022.
Request for Authorization to Establish
Master of Science (MS) in Clinical Mental Health Counseling
CIP 51.1508
University of North Carolina at Chapel Hill

I. Program Highlights

- The University of North Carolina at Chapel Hill proposes the establishment of a Master of Science (MS) degree in Clinical Mental Health Counseling.
- To comply with new accreditation standards, the program is mandated to change the current Master of Science program in Clinical Rehabilitation and Mental Health Counseling (CRMH) to two separate Master of Science degree programs: (1) Clinical Rehabilitation Counseling (CRC) and (2) Clinical Mental Health Counseling (CMHC). This process must be completed by July 2023 to maintain accreditation.
- The proposed program has a focus on counseling and research skills in evidence-based practice for individuals with rehabilitation and mental health needs. Students gain specialized training to work with individuals with psychiatric disabilities and developmental disabilities. Graduates rise quickly to leadership positions and most graduates, 81 percent, stay in North Carolina to work and serve the people of the state.
- The program aligns with the University of North Carolina System and UNC-Chapel Hill missions and strategic plans by producing graduates who are skilled in state-of-the-art counseling techniques for individuals with psychiatric disabilities, developmental disabilities, and physical disabilities.
- The North Carolina Division of Vocational Rehabilitation Services (NCDVRS) and the Division of Services for the Blind (DSB) are experiencing severe shortages of master’s level rehabilitation counselors. This shortage affects North Carolina and all 50 states. Graduates from the CRMH program address this need. Students in the CMHC program gain skills in working with individuals with psychiatric disabilities providing a huge benefit to NCDVRS, where an ever-increasing number of clients have psychiatric disabilities.
- The CMHC program is designed for graduates who seek specialization in providing professional mental health counseling to individuals, couples, families, and groups, to treat psychopathology and promote optimal mental health. The CMHC program combines academic preparation with direct field experience in varied public and private clinical counseling settings, providing students with a strong applied base in service delivery that is grounded in theory and research.

II. Academic Program Planning Criteria (Section 400.1 of the UNC Policy Manual)

1. Relation to Campus Distinctiveness and Mission. The current master’s degree program has been in existence for over 40 years at UNC-Chapel Hill. The program has continued to grow and was ranked the #9 Rehabilitation Counseling program in the country by US News and World Report in 2019. The CMHC and CRC degrees will continue to recruit highly qualified applicants toward meeting the public need and student demand. The current program is the only rehabilitation counseling and mental health counseling program in North Carolina that is situated in a School of Medicine (SOM) and will be the only CMHC and CRC programs situated in a SOM in North Carolina. This provides students with myriad benefits including opportunities for interprofessional educational experiences, guest
speakers, educational resources, and stellar clinical training sites throughout the healthcare system. The program has been the only CRMH program, and will be the only CMHC and CRC programs, in North Carolina that offer specialization in working with individuals with developmental disabilities and/or psychiatric disabilities.

2. **Student Demand.** Undergraduate programs in psychology and neuroscience are feeder programs for the proposed program, but other disciplines (Special Education, Human Development, Sociology) also apply. The number of applicants to the program continues to grow each year, from 83 in 2019, to 105 in 2020, to 114 in 2021. This reflects the growing interest in the field and the need for graduates who can meet the gap in rehabilitation counseling and mental healthcare. Total enrollment in the CMHC and CRC programs will be consistent with current enrollment, a total of 50 students.

3. **Employment Opportunities for Graduates.** The CMHC program will offer students exceptional training in working with people with physical and psychiatric disabilities in clinical and research endeavors. The strong clinical and research program components also position graduates to apply for doctoral programs. Students in the CMHC program obtain national certification as National Certified Counselors while students in the CRC program obtain national certification as Certified Rehabilitation Counselors. Students in both programs are eligible for state licensure as a Licensed Mental Health Counselor to work in community, private, public, hospital/clinical, and research settings. Specialization tracks allow graduates to be skilled in working with people with psychiatric disabilities (PD) and developmental disabilities (DD), an area of great need. The PD specialization provides expertise in working with clients with all mental health diagnoses, but with specific focus on individuals with severe and persistent mental illnesses. The DD specialization provides expertise in working with clients with DD including intellectual disabilities, developmental physical disabilities, brain injury, and autism. Graduates of the current CRMH degree program have a high employment rate (95 percent of graduates seeking employment obtain jobs within six months).

4. **Impact on Access and Affordability.** No changes to the already-approved graduate tuition and fees are requested. Graduates have debt, but starting salaries range from $40,000-$60,000 thus mitigating concerns about access and affordability. The need for mental health professionals is dire and employability for well-prepared graduates is not in question. The yearly average student debt for CRMH students is $29,629. The program sets aside 15 percent of school-based tuition receipts for student financial aid. Based upon enrollment projections for the next year, it is anticipated that this will generate $115,095 in student financial aid funds. In addition to the financial aid through school-based tuition, there are other sources of financial aid for students including merit-based grants, awards, scholarships, and assistantships. The Department provides financial aid information and counseling regarding awards and loan programs. The Development Officer helps raise scholarship funds for students.

UNC-Chapel Hill is requesting a tuition differential for this program. Tuition and fees for the 2021-2022 full-time (9+ credit hour) rates are as follows:
Full-Time 2021-2022 Master’s Tuition and Fees per Year (In Dollars)

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<td>1,008.32</td>
<td>1,008.32</td>
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<tr>
<td>Special Fees</td>
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5. **Expected Quality.** The current CRMH program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The CACREP now requires that the joint programs be established as two separate programs for continued accreditation. The CMHC and CRC programs will continue to offer students exceptional training in working with people with disabilities in both clinical and research endeavors. Students are encouraged to engage in research and are provided funds to attend the conference.

The proposed program will be the only CMHC program situated in a SOM in North Carolina. This provides students with myriad benefits and stellar clinical training sites throughout the healthcare system. In addition, the current CRMH program and the proposed program will be the only CMHC program in North Carolina that offer specialization in working with individuals with Developmental Disabilities and/or Psychiatric Disabilities. The current program offers a variety of long-standing clinical training opportunities, and these sites will continue to be part of the two separate master’s degree programs. There are more clinical training site requests than students to provide.

Students in the CMHC program are prepared to obtain national certification as a National Certified Counselor while students in the CRC program are prepared to obtain national certification as a Certified Rehabilitation Counselor. Students in both programs will be eligible for state licensure as a Licensed Mental Health Counselor-Associate to work in community, private, public, hospital/clinical, and research settings. The strong clinical and research program components of the programs position graduates well to apply for doctoral programs in a variety of disciplines.

6. **Faculty Quality and Number.** Significant overlap exists between the proposed CMHC and renamed CRC master’s degree programs. This change to two separate programs required by CACREP will not require a new budget, space, equipment, staff, or faculty resources. This overlap is supported by the accrediting body.

The department is staffed by six well-qualified faculty with a combined total of 67 years of professional experience. The difference in teaching load with the requested change to two separate master’s degree programs is one credit. This will result in a decrease the teaching load for some classes because there will be fewer students in them. The programs will achieve steady state in the first year they are offered. Total enrollment in
the two programs will be consistent with current enrollment. All faculty for the CMHC program received a doctorate in the teaching discipline or related discipline to meet the criteria to be eligible to teach graduate level courses.

7. **Relevant Lower-level and Cognate Programs.** Undergraduate programs in psychology and neuroscience are feeder programs for both proposed programs. Other disciplines (e.g., Special Education, Human Development, Sociology) also apply. In the fall of 2020 at UNC-Chapel Hill undergraduate enrollment for psychology was 1,651 students and 266 for sociology. This is only a fraction of the psychology and sociology majors at all the universities and colleges in the state of North Carolina and surrounding states. In fact, six percent of undergraduates in the U.S. earn a degree in psychology (National Center for Education Statistics).

8. **Availability of Campus Resources (library, space, etc.)** Since there will be no change in number of students, no need for change in facilities or support is anticipated. Courses will be held in existing spaces including the Division of Counseling Rehabilitation and Mental Health Lab in Bondurant Hall.

9. **Existing Programs (Number, Location, Mode of Delivery).** Nine universities within the UNC System offer master’s degrees in Mental Health Counseling. The prevalence of mental health needs in NC has been increasing since 2016 (SAMHSA, 2019). Even before COVID-19, 20 percent of American adults sought mental health treatment. In North Carolina an average of about 648,000 adults aged 18 or older experience a mental illness and less than 50 percent of those receive mental health services. In 2020, North Carolina ranked 33rd out of the 50 states on prevalence of mental illness without access to mental healthcare (NAMI, 2020). Needs for mental health treatment since the onset of the pandemic have skyrocketed. The CMHC program will train counselors who can assist with the shortage of mental health treatment in North Carolina and the U.S.

Only three other universities within the UNC System offer master’s degrees in Rehabilitation Counseling. Since 2008, the number of qualified Vocational Rehabilitation counselors has been insufficient to meet national and state Vocational Rehabilitation agency needs. There is a 13 percent projected increase in national employment rates for rehabilitation counselors between 2016 and 2026. This is above the seven percent average growth rate for other occupations (U.S. Bureau of Labor Statistics, 2019). The insufficient supply, coupled with the projected increased need, contributes to the shortage in rehabilitation counselors. In 2021, the UNC-Chapel Hill CRMH program was identified as the single master’s program with the highest number of interns and graduates to enter the NCDVRS workforce. NCDVR depends on the current CRMH program to supply rehabilitation counselors to meet the growing need.

10. **Potential for Unnecessary Duplication.** The proposed CMHC and renamed CRC programs will be the only counseling programs situated in a SOM in North Carolina. This provides students with myriad important didactic and clinical opportunities. These will be the only CMHC and CRC programs in North Carolina that offer specialization in working with individuals with Developmental Disabilities and/or Psychiatric Disabilities.
11. Feasibility of Collaborative Program. The faculty and students have a long history of collaborating with other universities in North Carolina (e.g., NC A&T, WSSU, ECU, WCU, App State, and UNC-G) and with other schools within UNC-Chapel Hill. These collaborations will continue.

III. Summary of Review Processes

1. Campus Review Process and Feedback. The proposal was reviewed by the Program Director, the Department Chair, Dean of the School of Medicine, the Administrative Board of the Graduate School, Graduate School Dean, Chief Financial Officer, Provost, Chancellor and Board of Trustees. Approval and support were provided at all levels.

2. UNC System Office Review Process and Feedback. Throughout the review process, UNC-Chapel Hill provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support the statements made.

IV. Recommendation

It is recommended that the Board of Governors approve the University of North Carolina at Chapel Hill’s request to establish the Master of Science (MS) in Clinical Mental Health Counseling (CIP 51.1508) effective in the fall 2022.
University of North Carolina at Chapel Hill– Master of Physical Therapy (MPT)  
(CIP 51.2308)

Overview: The Master of Physical Therapy (51.2308) at the University of North Carolina at Chapel Hill will be discontinued effective spring 2022. The request to permanently discontinue the degree program was approved by the head of the program, appropriate institutional committees, and the chief academic officer.

The program is being discontinued to correct the Academic Program Inventory. The Master of Physical Therapy (MPT) was replaced by a Doctor of Physical Therapy (DPT) in 2003. The MPT was retained temporarily to transition enrolled students. The last students in the MPT were enrolled in 2008-2009. No faculty or staff members will be reassigned due to the discontinuation of the program.

Recommendation: It is recommended that the Board of Governors approve the University of North Carolina at Chapel Hill’s request to discontinue the Master of Physical Therapy (51.2308) effective fall 2022.