

Cycling for Change

**Empowering UMD Students through
Sustainable Mobility and Policy Awareness**

Proposing an Introduction to Cycling course at the University of Maryland
in Collaboration with the Prince George's County Department of Planning

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**Partnership for
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Abstract

This research presents a comprehensive proposal for an introduction of a Cycling 101 class at the University of Maryland (UMD), developed in collaboration with the Prince George's County Planning Department. This initiative aims to bridge the gap between the UMD cycling community and policy awareness, addressing issues such as sustainability, mental health, and physical wellbeing. Through collaboration with experts like Michael Jackson and Professor Kimberly Driver, it evolved into a passion project, empowering students through cycling education.

The proposed course, designed as an "I-series" course, covers a range of topics including cycling mechanics, safety, environmental sustainability, and mental and physical health benefits. The research outlines the process of creating the course, emphasizing the importance of a well-structured syllabus and efficient review by university committees. Potential locations for the course within UMD's academic structure, particularly in the School of Public Health and School of Public Policy, are explored.

Extensive literature supports the positive impact of cycling on physical and mental health, reinforcing the course's potential benefits. The research findings suggest that Cycling 101 aligns with UMD's commitment to sustainability and offers tangible advantages for students' wellbeing. The proposed collaboration is significant for both UMD and the Prince George's County Planning Department, contributing to a cycling-friendly environment and promoting holistic urban mobility.

In conclusion, this research validates the feasibility of introducing Cycling 101 at UMD, highlighting its positive impacts on students, the university community, and urban planning in Prince George's County. The collaboration serves as a catalyst for sustainable practices and holistic wellbeing, aligning shared goals between the university and the Planning Department.

Introduction

In collaboration with the Prince George's County Planning Department, this final project explores the positive impacts of creating an Introduction to Cycling class at the University of Maryland. Rooted in extensive research and a shared commitment to wellbeing and sustainable urban mobility, this capstone initiative aims to bridge the gap between the vibrant cycling culture at UMD and crucial policy awareness. Beyond teaching the fundamental cycling skills, the course seeks to instill a profound understanding of sustainability, mental health, and physical wellbeing among students to create a holistic class for students from all backgrounds.

Cycling has emerged not only as a popular mode of transportation, but as an environmentally friendly and health-promoting activity. With a potential for positive impact, this project delves into the creation of a course that integrates practical riding lessons for varying skill levels. It strives to empower students to navigate their campus on two wheels and to become informed advocates for a healthier, more sustainable community.

This collaborative effort involved working closely with Michael Jackson of the Prince George's County Planning Department, who provided insights into urban development and infrastructure. Additionally, interactions with Professor Kimberly Driver, an expert in cycling education, were instrumental in shaping the vision and structure of the proposed Introduction to Cycling class. This collaboration and research uncovered concrete steps to create a cycling course for academic credit, delving into the intricacies of developing a syllabus, choosing the right academic department, and navigating the university's curriculum approval process. Our findings outline the practicalities of course creation and emphasize the potential benefits for students' physical and mental well-being and recognizing the privilege that comes with knowing how to cycle.

The proposed Cycling 101 course aligns with the university's commitment to sustainability and carbon neutrality, offering a practical avenue for students to engage with eco-friendly transportation practices. Moreover, this collaboration is significant for the Prince George's County Planning Department, as it aligns with their goal to create a cycling-friendly environment.

This work envisions a future in which the Introduction to Cycling class becomes an integral part of the University of Maryland curriculum, contributing not only to the enrichment of student experiences but to the broader goals of sustainable urban planning. This work shares the transformative potential of cycling education in shaping healthier individuals and communities.

Methodology

The research methodologies aimed to investigate both the benefits of cycling for college-aged students, and the design process to start a new course for academic credit at the University of Maryland. The work was done in collaboration with the Prince George's County Planning Department. This research took a varied approach, combining literature reviews, analysis of university resources and guidelines, data collection, and meetings with experts.

The research covered the various benefits of cycling, including physical and mental health benefits, cycling and sustainable policies, drawn from academic and medical journals, cycling reports, policy documents, and more. The Journal of Physical Therapy Science provided insights on the physical benefits of cycling, which include improved balance. Arthritis.org detailed cycling's positive impacts on joint health. The EPA website was useful for researching sustainability policy and cycling, providing data on vehicle greenhouse gas emissions and cycling's contribution to lowering emissions. The Communications Earth and Environment policy report on historical patterns and sustainability implications of worldwide bicycle ownership and use gives insight into the growing popularity of cycling, and the feasibility of creating this type of course. Web-based academic tools like Google Scholar and Jstor provided detailed expert data and testimony, which influenced the cycling course proposal.

Research also focused, to a lesser extent, on the developing and designing a new course for academic credit at the University of Maryland. This research analyzed resources and material from various UMD websites. Course sites with instruction guides like the "Proposing an I-Series Course" and the "VPAC Course Approval Process" were extremely valuable, listing the specific steps for creating a new course. Other procedural research included researching which school would house the course. The American Kinesiology Association and their work on UMD's Kinesiology Department confirmed it is the most practical spot for the course, in addition to the School of Public

Policy and Public Health.

Further information was gathered from experts—Michael Jackson of the Prince George’s County Planning Department and Kimberly Driver, cycling educator and former professor of a similar cycling course at Montgomery College. Jackson clarified the past work of the Planning Department and what to cover in the report. Driver gave feedback from her Montgomery College course, recommending the addition of certain units and modules, advice on what worked best and what to steer clear of.

Findings

Research Questions: University Procedures

1. What expertise and qualifications should a professor have to teach the cycling class?

The data here includes UMD faculty qualification guidelines and documents, a review of faculty credentials and experience, and surveys of student preferences for professors. In addition, we review similar cycling courses at Montgomery College and elsewhere to determine the qualifications for a cycling instructor at UMD.

Professor Kimberly Driver led a cycling class at Montgomery College. She noted that the professor must be physically fit; to teach 10-15 students a course that requires physical activity, it is essential that the professor is fit enough to run, manage, participate in, and maintain the course. The professor must be able to teach basic skills—changing a tire, general maintenance, shift gears, adjusting seat for the cyclist’s height.

In addition to the basics of cycling, the professor must have an enthusiasm for fitness and cycling, coupled with the ability to inspire and motivate students. They must also be able to assist students at all skill levels. Some may be familiar with cycling and have the skills to ride, many others may not. It is important that the professor can assist students no matter their level of biking experience.

From UMD Course Policy, there are qualifications to be a University of Maryland Professor. “This title may be used for nationally distinguished scholars, creative or performing artists, or researchers who have qualified for full-time appointments at the University of Maryland, Baltimore at the level of professor, who are active in MPowering the State programs, and who also qualify for full-time appointment at the University of Maryland, College Park at the level of professor. Holders

of this title may provide graduate student supervision, serve as principal investigators, and participate in departmental and shared governance. Initial appointments are for three years and are renewable annually upon recommendation to the provost by the unit head and dean. This is a non-paid, non-tenure track title but initial appointments, except in the case of faculty who hold full-time appointment at the University of Maryland, Baltimore, as professor, must follow the procedures for appointment as a new tenured Professor. For appointment of professors from the University of Maryland, Baltimore, the initial appointment must follow this University of Maryland Professor appointment procedure, using this transmittal form.”

Granted, these are the qualifications for being a UMD professor at UMD; in this case, instructor isn't teaching just course content but also a physical skill.

Other sources gave further guidance for the potential instructors.

- **Certifications and Training:** The instructor might have completed certifications and training programs including the Bike Instructor Certification Program (<https://icp.bike/>) or USA Cycling certifications (<https://usacycling.org/coaches/resources/bicp>)
- **Teaching Experience:** Teaching experience, for both cycling instruction and related to policy issues like sustainability and health. Instructors should have experience in effectively communicating with and guiding students through practical activities.
- **Safety Measures:** Instructors should be well-versed in cycling safety, including rules of the road, proper use of safety equipment, and emergency procedures.
- **Adaptability:** Instructors should be able to adapt to different learning styles and needs. Given the diverse backgrounds and experiences of students, it is essential that an instructor can tailor their teaching approach to accommodate various learning preferences.
- **Communication Skills:** The instructor should be able to clearly convey instructions, provide constructive feedback, and facilitate class discussions effectively.
- **Passion for Cycling:** An instructor who is enthusiastic about the subject matter is more likely to inspire and engage students. It is also beneficial to teach and speak from personal experiences.
- **Integration of Technology:** Consider the need for the instructor to integrate technology into the course. This could include cycling apps, GPS devices, or other technological tools to enhance the learning experience.

2. *What is the recommended time frame for the preparation and implementation of the cycling course?*

There is extensive research into the best ways to design and implement university courses. For example, Carnegie Mellon University's Eberly Center for Teaching Excellence & Educational Innovation offers online resources to design courses. When designing a course, the Eberly Center

recommends:

- attention to timing and logistics
- recognizing who students are
- working within situational constraints
- establishing learning objectives
- designing assessments
- developing appropriate instructional strategies
- developing course content and schedule.

Furthermore, regarding timing and logistics, the Eberly Center suggests breaking them down into three tracks: long run, middle run, and short run.

Long Run:

- Consider department goals, specifically curricular goals
- Determine course goals broadly
- Look at demographic and enrollment data
- Obtain materials needed for the course
- Determine whether Teaching Assistants are needed/available

Middle Run:

- Revisit department goals and where they fit with the course objectives
- Articulate course learning objectives
- Determine class schedule within the semester schedule
- Identify appropriate materials and formats (articles, videos, etc.)
- Determine the nature of the assignments and how activities will be collected
- Consider potential guest and field trip opportunities
- Ensure the alignment of objectives, assessments, and instructional activities
- Create an activity calendar
- Draft a tentative syllabus
- Reserve materials, including computer labs if necessary
- Request a Course Management System
- Inquire about administrative support

Short run:

- Review the class roster and consider necessary changes based on enrollment demographics
- Revise syllabus if necessary
- Check status of book orders, other required materials, and reserves
- Create or update a Course Management System
- Meet with Teaching Assistants
- Visit the classroom

To establish the proposed cycling course, it's most sensible to consider the long run time frame of considerations rather than middle and short run considerations. For example, the University department to house the course must be determined since it will dictate details curricular goals. Each department has a different mission and associated curriculum. It's worth noting that current UMD policy regarding its Climate Action Plan suggests offering more courses relating to sustainability as

General Education courses. The University also hopes to establish many of these gains by 2025, which may present an avenue to pursue the course's establishment.

Each department also has its own process for approving a course, including how it fits into the department's goals and mission. The frame to establish the course will depend on the department and aligning the course with the mission and curriculum. Once these are determined, the time frame will become clearer.

As the course is planned and developed, the middle and short run considerations can be incorporated.

3. Where could a new cycling course fit within the structure of the University?

- Department of Kinesiology/School of Public Health

Currently, the kinesiology major in the School of Public Health administers a variety of "Physical Activity Courses." While many of these courses are restricted to those in the Kinesiology major, Professor Jane Clark, Chair of the Department of Kinesiology, points out that other "course offerings are available to students across the campus."

The Department's Fall 2018 handbook states that these "physical activities provide the opportunity to directly experience and apply many of the theories and knowledge addressed in Kinesiology courses." Kinesiology students engage in physical activities as a part of their curriculum; the Department requires its students to complete four different Physical Activity courses. The Fall 2018 handbook lists 30 Physical Activity courses ranging from beginner, intermediate, and advanced skill levels, but the Department lacks a cycling course at any skill level.

In an interview with Brooke Smith from the Academy of Innovation and Entrepreneurship, she identified the Department of Kinesiology and its physical activity offerings as the most promising home for a Cycling 101 course. Because the research shows a correlation between cycling and improved public health, this course might also reside in the larger School of Public Health rather than restricted to the Department of Kinesiology.

- School of Public Policy

If the Cycling 101 course focuses more on the broader public impacts of bicycling, it could fit into the School of Public Policy. As noted, relevant public policy areas range from sustainability to public health.

The School of Public Policy prides itself on educating its students to be action-oriented thinkers who use their creativity to formulate solutions. Cycling 101 is an example of a creative solution to various public policy issues, allowing students to actively analyze how promoting cycling can improve public health and help the environment by limiting motor vehicle use.

4. What are UMD's administrative procedures for proposing and implementing a new cycling course?

To propose a new course for academic credit at the University, the first step is to choose the appropriate discipline. The “I-series” classes are appropriate for an academic Cycling 101 course, because they are defined as follows: “I-Series courses are unique to UMD and form the signature of the General Education program. Offered by all undergraduate programs, these courses engage students in consideration of topics of current and enduring significance—the so-called Big Questions of our time.”

Since Cycling 101 will cover a range of topics, we believe the I-series/general-education placement would be the correct discipline. I-series courses can be blended and taught across several schools at, capitalizing on each school’s strengths and weaknesses. For a course to contribute to the I-series program, it must address at least four of the six learning outcomes:

- Identify the major questions and issues in their I-series course topic.
- Describe the sources that topic experts use to explore these issues and questions.
- Demonstrate an understanding of basic terms, concepts, and approaches that experts use in addressing these issues.
- Demonstrate an understanding of the political, social, economic, and ethical dimensions involved in the course.
- Communicate major ideas and issues raised by the course through effective written and/or oral presentations.
- Articulate how the course has encouraged students to think in new ways about their lives, their place in the University and other communities, and/or issues central to their major disciplines or other fields of interest.

We believe a Cycling 101 course could easily address at least four of these outcomes, if not all six.

In addition to addressing the learning outcomes, certain proposal questions must be answered:

- I-Series courses should be framed around a "Big Question." What is the "Big Question" that drives your course?
- Please list the instructor(s) who will be teaching this course.
- Please write 2 or 3 sentences that can be used to advertise your I-Series course to students.
- Describe the approaches to be used in this course to engage students.
- What role will teaching assistants (graduate or undergraduate) play in the active engagement of students?

A key step in proposing a course is the development of the course syllabus. Syllabus development can be broad and must encompass multiple aspects of a topic. For Cycling 101, the syllabus will likely include units on cycling mechanics and safety, bicycle parts, cycling in and around UMD, environmental and sustainability policy, physical health, and mental health benefits, and more. For guidance in developing the syllabus, the instructor can work with the program curriculum development team at: tltc@umd.edu.

Once the proposal questions are answered, the course addresses at least four of the six learning outcomes, and has a working syllabus, the course design is reviewed by the I-Series Faculty Board and either approved or sent back for more work. Common reasons proposals are sent back include:

- Issues with the syllabus including a missing syllabus or lack of course schedule.
- The student activities described aren't given significant mention in the syllabus and/or weight in the course grade.
- The delivery format is too traditional. The I-Series Faculty Board expects an approach that includes active student-faculty and student-student engagement such as group projects, teamwork, and field trips.

When the materials are ready, the proposal is created in the CIM curriculum management system, where it will go through three stages of review at the department, the College and by the General Education Faculty Board.

The department review can take time, and it's suggested that instructors contact the department and to let them know a proposal has been submitted: "Contact your department and college representatives to alert them to your course submission and to find out the time required for department and college level review."

When the proposal receives departmental and College approval, it is referred to the General Education Faculty Board Level: "You are encouraged to submit a General Education proposal early in the academic semester one year prior to when the course will be offered. General Education proposals received by Faculty Boards by October 1st in the fall and March 1st in the spring are guaranteed to be reviewed by the board in that academic semester."

The Faculty Board may provide comments on the proposal review, which can be found on the CIM system. Board chairs are available to discuss comments and provide assistance, and instructors are encouraged to address any feedback and resubmit in a timely fashion so the approval process can move forward.

After Faculty Board approval, as a new course, it will go through the VPAC course approval process. While the CIM review can be lengthy, the VPAC approval process should take six to eight weeks, often less. The VPAC course approval process includes:

- review and approval by the Department Committee for Programs, Curricula and Courses (Department PCC)
- review and approval by Department Chair
- review and approval by the College/School Committee for Programs, Curricula and Courses (College PCC)
- review and approval by the Dean (or the dean's delegate, who in most cases is also the college's VPAC Representative)
- initial review by the Provost's Representative for compliance with campus policies
- review by VPAC representatives, who identify any areas of concern
- final review and approval by the Provost's Representative.

The proposal is then forwarded to the Office of the Registrar for implementation. The departmental representatives to contact can be found on the UMD websites.

5. What are the essential modules to include in the cycling class?

General Modules include:

- bicycle equipment
- bicycle safety
- local trails and bicycling in Prince George's County
- bicycling in the greater Washington region
- health benefits of cycling in units on physical and mental health
- sustainability and bicycling in multiple units.

Research Findings: Policy

Sustainability

Bicycling as a means of transportation has proven to be more environmentally friendly than automobiles. According to the EPA, a typical passenger vehicle emits 4.6 metric tons of carbon dioxide per year. Bicycling emits no fossil fuels and can efficiently move people over shorter distances, such as neighborhoods and near and around campus. Environmentally friendly transportation that emits less fossil fuel are among the goals and plans of both the University and Prince George's County. The University aims to reduce its commuting-based carbon emissions by 53,000 MTCO₂e and Prince George's County aims to decrease on-road vehicle emissions, which are more than 4 million MTCO₂e. Encouraging more users to cycle will help the University and the County meet these climate-oriented goals.

Incorporating sustainability and environmental policy into a UMD cycling course is a key step toward fostering a holistic understanding of cycling's broader impact. Beyond the physical and mental health benefits of bicycling, integrating concepts related to environmental policy is critical.

This course will delve into the environmental benefits of cycling as a low impact transportation mode, exploring topics such as the importance of reducing carbon emissions, energy and efficiency options, and the positive and personal effects of cycling on wellbeing. Furthermore, discussions on environmental policy related to infrastructure, urban planning and local initiatives can give students insights into how their passion for biking intersects with broader social and environmental goals. Encouraging eco-friendly practices such as bike maintenance can instill a sense of environmental stewardship among students, creating cyclists as well as advocates for sustainable living.

Physical Health

Cycling several positive health benefits. The Cycling 101 class will cover cardiovascular health major diseases, weight reduction, balance, joint health, cholesterol, and more.

Regular cycling can dramatically improve cardiovascular health. According to the Scandinavian Journal of Medicine & Science in Sports, studies "showed a clear positive relationship between cycling and cardiorespiratory fitness in youths," and "demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects." Not only does regular cycling improve cardiovascular health, but it can fight against life-threatening diseases such as cancer.

The Harvard School of Public Health corroborates these findings in their study that examined more than 18,000 patients. “After 16 years, the findings showed significantly less weight gain in those who walked briskly or cycled.” In addition, the study found “those who did not cycle at the start of the study but increased by as little as 5 minutes a day gained less weight than those who never cycled.”

Bicycling can also greatly help posture, balance, and coordination. Balance tends to decline with inactivity and age, but biking requires stabilizing the body to keep the bike upright. Studies by the Journal of Physical Therapy Science show biking can help improve overall balance and coordination. The study demonstrated that “cycling exercise training is an effective intervention for increasing the balance and gait abilities,” and that “bicycle exercise can help to prevent falls by improving the balance of elderly persons.”

Doctors also praise cycling as an effective joint exercise, with former medical director of the Sports Medicine Clinic at the University of Minnesota, Dr. Joseph Garry stating “The continuous motion that’s part of cycling is very helpful for arthritic joints, the more the joint moves through its full range of motion, the more synovial fluid is produced. This lubricates the joint, so you move more easily the rest of the day.”

Mental Health

Substantial research supports the positive impact that general exercise can have on mental health. A number of studies have focused specifically on cycling as a vehicle for improved mental health.

A study in the Journal of Transport and Health found a positive correlation between physical activity and quality of life in adults. While it didn’t find every type of physical activity positively impacted quality of life to the same extent, the authors concluded that “walking and biking were associated with indicators of mental health and vitality.”

Research from the Journal of Physical Education and Sport went further in showing the cognitive and neurological impacts of biking on public school students. Researchers in the Department of Health and Human Performance at the University of Tennessee, Chattanooga found “consistent evidence” that neurological activity was improved both during and after their subjects went on a bike ride. Specifically, they measured elevated indicators for focus, motivation, and relaxation. They also found that these indicators were “associated with improvements in working memory... [particularly for those] exhibiting signs of mental distraction.”

In their study, Ma et al. found that engaging in regular cycling-based transportation “may help reduce levels of psychological distress and improve levels of life satisfaction.” It is important to note that these researchers see the positive mental health benefits of biking to most likely when its used regularly for transportation. To encourage biking for transportation, the Cycling 101 course can use this extensive research to educate students about the correlation between biking and mental health benefits.

Discussion and Recommendations

In collaboration with the Prince Georges County Department of Planning, this extensive research aims to pioneer an Introduction to Cycling course at UMD. This capstone initiative seeks to teach the cycling fundamentals and strives to cultivate a profound understanding of critical policy issues, including sustainability, mental health, and physical wellbeing.

Cycling has emerged as a popular and environmentally friendly transportation mode with numerous benefits for individuals and communities. Recognizing the potential for positive impact, this project endeavors to connect the cycling culture at UMD and policy awareness. By integrating practical riding lessons that accommodate those with varying skills, while educating on sustainability practices, mental health benefits, and physical fitness, the course will empower students to become informed advocates for holistic wellbeing and responsible urban mobility.

By collaborating closely with Prince George's Department of Planning, we were able to gain an understanding of urban development and existing infrastructure and use planner Michael Jackson's expertise to guide us in the right direction. Additionally, Jackson connected us with Professor Kimberly Driver, at Montgomery College who had taught an Introduction to Cycling course. Driver was extremely informative. We reviewed her class syllabus and recommendations for the future. This expertise helped the project, which turned into a passion project to empower and educate students through cycling.

Research for this project yielded important results. First, UMD requires specific steps to create a Cycling 101 course for academic credit. The process differs slightly by school but overall, it is straightforward. Cycling 101 would be an "I-series course" because it can be taught in several schools at the University (Umd.edu). Because Cycling 101 will cover a range of topics, we believe the I-series or a more general placement would be the correct discipline.

A major factor in getting the course accepted is the syllabus. Developing a syllabus is one of the more difficult aspects of creating a new class but the University's program curriculum development

team provides support. The Cycling 101 syllabus will likely include units on cycling mechanics and safety, bicycle parts, cycling in and around UMD and Prince George's County, environmental and sustainability policy, physical and mental health benefits of cycling, and more.

Research indicates that developing the specifics of the syllabus should be done toward the end of the process. First, it's necessary to understand the department's curricular goals, whether the course meets those goals, and tailoring the course to meet the students' needs (Eberly Center). At this point a syllabus can be fully realized.

As an I-series course, Cycling 101 must meet 4 of the 6 learning objectives.

- Identify the major questions and issues in their I-series course topic.
- Describe the sources the experts on the topic would use to explore these issues and questions.
- Demonstrate an understanding of basic terms, concepts, and approaches that experts employ in dealing with these issues.
- Demonstrate an understanding of the political, social, economic, and ethical dimensions involved in the course.
- Communicate major ideas and issues raised by the course through effective written and/or oral presentations.
- Articulate how this course has invited them to think in new ways about their lives, their place in the University and other communities, and/or issues central to their major disciplines or other fields of interest (General Education).

With a working syllabus and approved "I-series" placement, the proposal is entered in the CIM curriculum management system for the "VPAC Course Approval Process." The stages of the review take varying amounts of time and communicating with department heads can ensure the course is being efficiently reviewed.

The optimal school within UMD for a Cycling 101 seems to be the Kinesiology Department in the School of Public Health, which offers a variety of "Physical Activity Courses," that allow students to apply what they have learned about Kinesiology in a physically active setting, though these courses tend to be restricted to Kinesiology students. The Kinesiology Department lacks a cycling course at any skill level. While the Department offers an already-structured setting for Cycling 101, the broader School of Public Health could also be an appropriate setting for the class. Cycling 101 would spend extensive time instructing students about the various health benefits that result from biking as a part of your local travel routine, a direct correlation to the School's curriculum.

Cycling 101 could also be taught in the School of Public Policy. The course would include literature on positive correlation between physical activity (cycling in particular) and public policy areas such as sustainability and public health. Nonetheless, we suggest following Ms. Smith's recommendation to implement Cycling 101 in the Kinesiology Department since the course fits within the structure of Physical Activity Courses. The course should be offered to students regardless of their major.

There is little academic literature on the specific benefits of a Cycling 101 course, we conducted research on the positive benefits cycling has on college-aged students. In terms of physical health, the literature pointed to many positive health benefits. Studies in various medical journals show a "clear positive relationship between cycling and cardiorespiratory fitness in youths" and that

cycling “demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects,” (Scandinavian Journal of Medicine & Science in Sports).

The Harvard University School of Public Health corroborates these findings. Their study of more than 18,000 patients found that “After 16 years, the findings showed significantly less weight gain in those who walked briskly or cycled.” In addition, they found “those who did not cycle at the start of the study but increased by as little as 5 minutes a day gained less weight than those who never cycled” (Harvard School of Public Health).

Other positive aspects of cycling include benefits to balance and posture, and an increase in coordination (Journal of Physical Therapy Science). The Cycling 101 course should include units on the physical health benefits of cycling covering weight loss, balance, cardiovascular fitness, and more.

Not only does cycling prove to be beneficial for physical health, but also for mental health. With mental health becoming a pressing issue at UMD, students could benefit from participating in a Cycling 101 course, especially if it leads to biking for transportation around campus and Greater College Park. The Journal of Transport and Health’s recent study showed a positive correlation between rates of physical activity and quality of life in adults. The study found that not every type of physical activity provides equal positive impacts on quality of life, but did find strong associations between biking (and walking) and positive indicators of mental health and vitality.

Research in the Journal of Physical Education and Sport explored the cognitive and neurological impacts of biking on public school students, finding “consistent evidence” indicating improved neurological activity during and after subjects engaged in a bike ride. Specifically, it measured elevated indicators for focus, motivation, and relaxation which were “associated with improvements in working memory... [particularly for those] exhibiting signs of mental distraction.” Ma et al.’s research also found that regular cycling transportation could “help reduce levels of psychological distress and improve levels of life satisfaction.” Cycling 101 should highlight these extensive findings on the positive association between biking and improved mental health so that students learn how a biking routine benefits their long-term wellbeing on campus and beyond.

The findings from our extensive research into establishing Cycling 101 at UMD also enhance the goals of our collaboration with the Prince George's County Planning Department. The proposed UMD course can be a bridge between campus cycling culture and essential policy awareness. By integrating riding lessons with a curriculum that encompasses sustainability practices, mental health benefits and physical fitness, we aim to empower students to become informed advocates for holistic wellbeing and urban mobility.

Cycling 101 should be an “I-series” course covering policy issues related to cycling and the various skills required for cycling. Interviews with Michael Jackson and Professor Kimberly Driver highlighted the important material for the course and contributed to creating a comprehensive syllabus.

The potential course offers significant benefits for UMD and Prince George's County. At the

University, a Cycling 101 class would offer tangible benefits to students' physical and mental wellbeing. The positive health outcomes associated with cycling, supported in the academic literature, make a compelling case for incorporating such a course into the University's curriculum. The potential positive impact on students' quality of life, physical fitness, and mental health underscores the importance of integrating cycling education into the academic experience. Moreover, the proposed course aligns with the University's commitment to sustainability, supporting students in environmentally friendly transportation practices. It also aligns with the University's Climate Action Plan goals, which encourage more sustainable behavior through its courses as part of President Pines's commitment to carbon neutrality by 2025 (Climate Action Plan). As more students bicycle around campus, they may consider it as option for wider travel and commutes (Park & Akar, 2019). An easy and collaborative course creation process will ensure that the course is efficiently reviewed and approved.

For the Prince George's County Planning Department, the research underscores the importance of fostering a cycling-friendly environment within the community. Findings on the positive effects of cycling on physical and mental health, support the Department's goal to promoting sustainable and healthy urban mobility. Connecting the University's cycling culture with broader policy issues contributes to a more integrated and informed community.

In conclusion, this report's findings validate the feasibility of introducing a Cycling 101 course at the University of Maryland and highlight the far-reaching positive impacts the course can have on students, the University community, and the broader urban planning context in Prince George's County. The collaboration between UMD and Prince George's County aligns with their shared goals and can be a catalyst for promoting sustainable practices and holistic well-being.

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