Campus Sustainability Grants Program - Application Form

More Walkable UGA

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Program Contacts:
Office of Sustainability, sustain@uga.edu; (706) 542-1301
Kevin Kirsche, Director, Office of Sustainability, Kkirsche@uga.edu; (706) 542-0588
Campus Sustainability Grant Application – Cover Sheet

PROPOSAL INFORMATION

Project Title: More walkable UGA

PRINCIPAL STUDENT INVESTIGATOR (PROPOSER) INFORMATION

Name: Xuan Zhang
Email: xuan.zhang@uga.edu
Phone: 706 201 4195
Degree Program / Graduation Date: Master/ May 2016

FACULTY / STAFF SPONSOR INFORMATION

Name: Lan Mu
Email: mulan@uga.edu
Phone: 706 542 1058
Title / Department: Associate Professor, Department of Geography

ADDITIONAL PROPOSAL INFORMATION

The proposal includes the following fields (check all that apply):

- X Education
- X Research
- X Service

Campus Operations

Sustainability + Arts submission

Summary of Budget:

Personnel Funding ........................................ $ 1000

Equipment ...................................................... $ 3000

Supplies / General Expenses................................. $ 600

TOTAL .......................................................... $ 4600
Campus Sustainability Grants Program – Project Overview

Project Overview

Project Description:

As the most economical and tool-free transportation mode, walking can not only bring us to our destinations, but also bring physical and psychological benefits. Students often schedule out the hours of time to work out at crowded gyms. Why not spread out the time and get the same amount of exercise walking between classes breathing fresh air in pleasurable surroundings? The More Walkable UGA project aims to seek important characteristics of built environment that either promote or discourage walking activities. Online and paper versions of a survey will be used to obtain walking preferences of pedestrians on the UGA campus. We will employ Geographical Information Science (GIScience) techniques and statistical analysis to process the survey results and design and distribute a campus walkability map, which will provide not only healthier walking suggestions for students, faculty and staff, but also inputs for future UGA design and construction. Derived from the survey results and existing GIS data on campus, measures such as sidewalk conditions, route connectivity, perceived traffic condition and perceived sidewalk condition will be incorporated into the analysis. The long-term goal of the project is to promote walking and a healthier lifestyle in a university campus setting. As this project will involve humans as survey participants, it is regarded as a Human Subject. At this time the project initiator and advisor have already passed the Collaborative Institutional Training Initiative (CITI) training required for a Human Subject. With a preliminary survey ready for further improvement, the project has been approved by the Institutional Review Board (IRB) at the University of Georgia in October, 2015. Preliminary results from the survey have shown promising and interesting outcomes for further analysis.

This project aims to contribute to UGA’s implementation of sustainability by following the Strategic Direction VII:

Strategic Direction VII in the University of Georgia 2020 Strategic Plan:

   c. Strategic Priority: Update UGA Guidelines for Design and Construction to incorporate, implement, and monitor current sustainable design strategies, including Leadership in Energy and Environmental Design (LEED) and Sustainable Sites Initiative standards when appropriate.
   Benchmark: Stages of completion of drafting, gaining support for, and implementing the guidelines.

Intended Outcomes:

- Campus walking preferences will be analyzed based on the survey results, and those built environment characteristics, which promote walking, will be written into the report for future design and construction reference.
- Derived from the survey result, a pamphlet will be created containing a walkability map and information about the health benefits of walking. 2000 pamphlets will be distributed at places
such as the Tate Student Center, the Ramsey Student Center, the Health Center, residence halls, and UGA campus transits to reach as many people as possible.

- The road signage, including the walkability map and other information, will also be displayed at bus stops and main areas for educational purpose.

Project Contribution:

The project can make the following contributions to the local people and the University:

- Because no walking environment assessment currently exists for the UGA campus, the UGA walkability map will fill in the gap and meet an important need. (See Figure 1 as a simple illustration of walkability map).

- The wide distribution of the walkability map could raise awareness of the health merits of walking among UGA-affiliated people and beyond, which would promote health and reduce the obesity rate in the long run.

- It would also benefit the environment by saving energy, reducing our dependence on fossil fuels and the University’s carbon footprint. Thus, the project would enhance campus sustainability practice.

- The survey results and walkability map would provide helpful input for future campus design and construction, which would better support physical activities and sustainability.

![Figure 1 An Illustration of Walkability Map](http://www.sustainablecitiescollective.com/)

Relevant Partnerships:
Health Promotion Department at University Health Center
University of Georgia Ramsey Student Center
University of Georgia Campus Transit
UGA Facilities Management Division Grounds Department
Campus Sustainability Grant Application – Compliance Form

Please answer all of the following questions, and explain in full where required.

Will this project require compliance review in any of the following areas?
Please place an “X” on the appropriate line to indicate “Yes” or “No” for all three compliance areas.

1. Animal Use
   _____ Yes
   _X_ No
If “Yes,” please reference the section and page number in the proposal describing animal use:

For more information contact:
706-542-5933

2. Biohazardous Materials
   _____ Yes
   _X_ No
If “Yes,” please reference the section and page number in the proposal describing biohazardous material use:

For more information contact:
706-542-9876

3. Human Subjects
   _X_ Yes
   _____ No
If “Yes,” please reference the section and page number in the proposal describing human subject use: p4, p7 & p10

For more information contact:
706-542-5318

Name: Xuan Zhang
Title: Graduate Student
Date: 10.9.2015

_X_ By placing an “X” on this line, I certify I will fulfill all requirements pertaining to compliance if this grant is approved.
# Campus Sustainability Grant Application – Budget Sheet

Complete all sections.

## I. Personnel **

<table>
<thead>
<tr>
<th>Number</th>
<th>Amount/Person</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UGA Staff</strong></td>
<td><strong>Installation of signs</strong></td>
<td><strong>$200</strong></td>
</tr>
<tr>
<td><strong>UGA Student</strong></td>
<td><strong>$10/h Recruit survey participants, process data analyze the survey results and design the advertisement materials.</strong></td>
<td><strong>$800</strong></td>
</tr>
</tbody>
</table>

**Total Amount: $1000**

## II. Equipment**

<table>
<thead>
<tr>
<th>Specific Equipment Items</th>
<th>Length of Use</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. 24”x36” map signs and frames (2-5, depending on the quality)</strong></td>
<td><strong>Long-term use</strong></td>
<td><strong>$3000</strong></td>
</tr>
</tbody>
</table>

**Total Cost: $3000**

## III. Supplies/General Expenses**

<table>
<thead>
<tr>
<th>Specific Supply Items</th>
<th>Comment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Printing</strong></td>
<td>Colored Pamphlets (2000) (Staples Copy &amp; Print)</td>
<td><strong>$500</strong></td>
</tr>
<tr>
<td><strong>2. Recruiting materials</strong></td>
<td>Retreat (candy), $10 gift card (*5)</td>
<td><strong>$100</strong></td>
</tr>
</tbody>
</table>

**Total Cost: $600**

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**Notes:**
- **Acceptable personnel funding include:** 1) hiring outside consultants or contractors to perform required project tasks, 2) UGA Facilities Management Division staff labor charges for project implementation, 3) UGA student workers managed by participating UGA department to perform required project tasks.
- **If more space is needed, please attach a separate document listing specific items and their costs.**
- **Note:** All Campus Sustainability Grant funds must be expended before June 30th.
Specific Aims:
The specific aims of this project include:
- Conduct survey (IRB has approved) and analyze different groups’ walking preferences at UGA. Identify the built environment characteristics that promote walking for future planning and construction reference.
- Design a Walkability Map for UGA main campus.
- Design materials containing the walkability map and information about the health benefits of walking. 2000 pamphlets will be distributed to promote walking activities; signs will be installed for educational purposes, and an online interactive map will show the results and tell the story outside UGA.
- Promote walking activities on UGA campus in the long run.

Significances and Merits:
The project has the following significances and merits to the people and University:
- Currently there is no walking environment evaluation existing for the UGA campus, so the UGA walkability map will fill in the gap and meet an important need.
- Concerning reduction of the obesity rate in the long run, the wide distribution of walkability materials could raise awareness of walking benefits and promote healthy lifestyles.
- The survey findings and walkability map would provide inputs for future campus design and construction to better support physical activities.
- The project would enhance campus sustainability practice for the sake of saving energy, reducing its dependence on fossil fuels and decreasing its carbon footprint.

Project Details:
This project aims to raise the awareness of walking health merits among the people of UGA by evaluating, and visualizing the walkability situation on UGA main campus. Several steps are involved to effectively and successfully implement this project:

1. Recruit survey participants.
2. Analyze perceived and objective walking preferences (based on the survey results).
3. Calculate the Walkability Score for the main campus.
4. Design and distribute the promotional materials.

The four steps will be described to the full extent in the following part.

1. Survey Participant Recruitment
In order to target UGA-affiliated people and local residents, a survey was designed (see Additional Supporting Documents) to obtain their walking preferences. Previous studies have proved that some built environment characteristics can influence walking activities in both positive and negative ways, so this survey will focus on those characteristics including sidewalk presence, sidewalk vertical slope, amenity availability, traffic speed etc. People will also respond with their status (undergraduate student, graduate student or faculty etc.), walking motivations and their transportation mode for further analysis. Various recruitment methods will be used here: send out emails to listervs in different departments, visit local related agencies and offices, have a promotional booth at the Tate Student Center and more. The survey data will be collected from both electronic and paper versions for an appropriate number of participants to represent the whole population at UGA main campus.

2. Analyze Perceived and Objective Walking Preferences

Based on the survey results, the built environment characteristics that promote walking will be identified and measured. The Analytic Hierarchy Process (AHP) will be applied here to measure the individual importances/weights of the characteristics from participants’ perceived and objective views. It would be interesting to see whether there are preference differences among groups (faculty, graduate student, undergraduate etc.) which can be revealed from the survey result.

3. Calculate the Walkability Score for the Main Campus:

The spatial data were obtained from the Office of University Architects, and Federal agencies, such as USDA (U.S. Department of Agriculture). All data will be processed and prepared for the main campus. Ancillary data, such as traffic speed and sidewalk width, may need to be collected.

Figure 2 Walkability will be calculated based on available spatial data
With the weight of individual characteristics and the corresponding condition of the sidewalk segment along the street, its walkability can be calculated out for the main campus. (See Figure 2 and 3)

4. Design and Distribute the Promotional Materials:

Even when the walkability has been calculated out, the way you promote and advocate for the results is really important. The promotional materials will be well designed to attract people’s attention at the very first sight, and they will be easy to understand and interesting to read. Several materials will be designed, including colored pamphlets, signs and an online interactive map. Once the design is finalized, the materials will be ordered, printed out and/or distributed in the following ways:

1) 2000 well-designed colored pamphlets will be distributed at multiple popular locations on campus, such as the Tate Student Center, the Ramsey Student Center, the Health Center, residence halls, dining halls and on UGA transit to reach as many people as possible.

2) For the 2-5 signs (as showed in Figure 4), one of them will be installed on campus at the North Campus Quad (near the UGA Arch), and one will be placed near the Tate Student Center bus stop (the other signs will be installed at other populous places). The Arch, Tate Student Center and Sanford Stadium are the most populous places on campus. They would reach not only the large group of students, faculty and staff walking on the campus, but also the friends, families and visitors to UGA.

3) The online map application (an example is available here) can also be a good tool for people to interactively explore the results and the background information behind.

Those materials can not only show the walkability variation over the campus, but also provide an illustration of campus walking health benefits, such as estimated calorie burned for a certain walking route.
**Feasibility:** (Merit and feasibility of implementing the project with available resources)

The project can be done within the timeframe with available resources:

1. The research project is a human objects involved project, and it has been approved by the University of Georgia Institutional Review Board (IRB) at the University of Georgia in October, 2015. It means it has been well prepared to do the study.
2. Preliminarily, this survey has been designed and distributed among small groups for feedback. After more discussion with participants and revisions, it will be widely distributed to represent the whole population. The current online survey is available [here](#) and paper version attached in the Additional Supporting Documents section.
3. The GIS data were in the newest version, and were provided by the the Office of University Architects at the University of Georgia in October, 2015. This can make sure the analysis results are up-to-date as well.

**Timeframe:** *(Timeframe for completing all aspects of the proposed project.)*

<table>
<thead>
<tr>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
</table>
| Nov. 2015 - Jan. 2016 | Revise survey  
Survey participants recruitment and survey result collection |
| Jan. and Feb. 2016 | Survey result and GIS data process  
Project presentation at UGA Interdisciplinary Research Conference (IRC) |
| Mar. 2016 | Main campus walkability calculation  
Project presentation at Association of American Geographers(AAG) Annual Conference |
| Apr. 2016 | Material (sign, pamphlet and poster) design and print  
Project summary presentation on Earth Day |
| May - June 2016 | Material distribution, sign installment, and use social media and email listserv to advertise for the project outcomes |
Campus Sustainability Grants Program – Communication Plan

We would work with the Health Promotion Department at the University Health Center, UGA Campus Transit, the Office of Sustainability and more to promote a healthier and environment-friendly lifestyle. The finding will be promoted through following ways:

**Pamphlets Distribution:**

The well-designed colored pamphlets will be distributed at multiple popular locations on campus to reach as many people as possible.

**Walkability Map Signs Installment:**

More than two signs will be installed on main campus to show all the findings and the walking benefits to encourage more walking activities.

**Online Walkability Map:**

The online map application will tell the whole story including the background, methodology, and results of the More Walkable UGA project, so people can know the working and process interactively explore the map. People outside UGA can also access to it.

**Result Email Sending Out:**

The findings will also be sent out to the UGA groups, which are the student, faculty and staff via email listervs, local media on campus and in Athens, such as International Student Life weekly update. Facebook and other social media could also be the place to advocate and display the results.

**Project Presentation:**

The research project will be presented at multiple conferences, such as UGA Interdisciplinary Research Conference (IRC), and Association of American Geographers (AAG) Annual Conference at San Francisco. It can also be part of Earth Day events on UGA campus.
To: sustain@uga.edu
Subject: Faculty Sponsor Letter of Support for Xuan Zhang (Geography)

Dear UGA Sustainability Grant Program Selection Committee,

I am writing to strongly support Ms. Xuan Zhang’s application for the UGA 2015-2016 Campus Sustainability Grant Program. Xuan’s proposal is entitled More Walkable UGA. She will conduct online surveys to identify and analyze preferred environmental variables that encourage and invite people to walk on campus. The project will generate a series of maps and signs to promote a more walkable UGA.

Xuan is a second year MS student in the Department of Geography, specialized in Geographic Information Science (GIScience). Before joining UGA, she received her B.S. degree from a very strong and competitive GIScience program at Wuhan University, China. Xuan has been working on the NASA DEVELOP National Program as a geospatial participant, research consultant and a Campus Ambassador since January 2013. The excellent academic and research background has helped Xuan build solid knowledge and skills in geography, and particularly in GIScience. Xuan is currently working on her thesis and the topic is perceived and objective measures of built environment walkability of a university campus. The project she proposed for the UGA sustainability program and her thesis research would be mutually beneficial.

As her major professor, I have known Xuan since August 2014. I encourage her to apply for your program because I believe her trainings in geography and GIScience will make her an outstanding candidate to conduct a sustainability project.

Thank you for your consideration and please contact me if you have additional questions.

Sincerely,

Mu, Lan

Mu, Lan
Associate Professor
Department of Geography
University of Georgia
Athens, GA 30602
Telephone: 706-542-1058
Fax: 706-542-2388
Email: mulan@uga.edu
Campus Sustainability Grants Program - Anticipated Grant Project Metrics

The anticipated grant project beneficiaries will include all UGA students, faculty, staff and campus visitors. With further implementations of campus planning and constructions, we all can enjoy a more walkable environment in the near future, which can support more walking activities on campus.

Project Metrics:

Follow-up interviews on campus

Interview 50 people around the signs and where pamphlets are provided: whether they notice the sign/pamphlets before; does that change their mind or life etc.

Obtain Feedback From Social Media

Use the More Walkable UGA official account in the social media (Facebook, Twitter etc.) to obtain project feedback.

Increase Scholar Awareness

Starting from this project, there will be some scholar awareness in Geography, City Planning and Public Health fields that the walking environment should obtain more attention in the further research and real application cases.
Walking Preference Survey for UGA Campus

Dear participant:

I am a graduate student, under the direction of Dr. Mu, in the Department of Geography at The University of Georgia. I invite you to participate in a research study entitled Perceived and Objective Measures of Built-Environment Walkability of a University Campus. The purpose of this study is to identify and measure the features which can promote more walking activities.

Your participation will involve a one-time survey and should only take about 5 minutes. Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled.

This survey asks about your preference when you are a pedestrian (on UGA campus). It won’t ask sensitive or personal identifiable information. The findings from this project may provide information on improving the walkability and health promotion in the long run. There is no known risk associated with this research.

If you have any questions about this research project, please feel free to call me, Xuan Zhang, at (706)201-4195 or send an e-mail to xuan.zhang@uga.edu. Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board; telephone (706) 542-3199; email address irb@uga.edu.

By checking the following check-box, you are agreeing to participate in the above described research project.

Thank you for your consideration!

Sincerely,
Xuan Zhang

☐ I agree to participate in the survey

Following questions ask about your agreement or disagreement:
Please only consider the human reasons that can be improved in the future city planning, regardless of commuting needs or natural reasons such as weather.

UGA map is available from UGA GIS at:
Walkability Survey

Sidewalk Condition

- I would choose a route with a sidewalk over a route without a sidewalk.
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree
(The level of agreement increases from 1 to 9. And 5 means neutral. The following questions are all set in the same manner.)

- Adequate sidewalk width makes the walking more pleasurable.
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

- The vertical slope of a path is what I would consider when choosing a walking route.
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

- Which type of vertical slope do you prefer when walking?
  - Hilly (bigger than 10 degree)
    As the Sanford Dr. from the Department of Geography to the Tate Center.

  - Slight hilly (5-10 degree)
    As the Cedar Dr. from the Food Science/ Statistics to the Biology.

  - Flatness (0-5 degree)
    As the Sanford Dr. from the Georgia Center to the Snelling Dining Hall.

Thank you so much for your participation!
**Walkability Survey**

**Connectivity Condition**

- I prefer to walk in a place with multiple route choices within sight (about 164 feet/50 m).
  - Strongly disagree
  - 1 2 3 4 5 6 7 8 9
  - Strongly agree

- I prefer to have pedestrian crossings nearby at any given place (about 67 feet/20 m).
  - Strongly disagree
  - 1 2 3 4 5 6 7 8 9
  - Strongly agree

- I prefer a walking route with a bus stop nearby, even if I don't plan on riding the bus.
  - Strongly disagree
  - 1 2 3 4 5 6 7 8 9
  - Strongly agree

**Availability of Amenities**

- How important is it these types of amenities lay along your route?

<table>
<thead>
<tr>
<th>Extremely important</th>
<th>Neutral</th>
<th>Extremely unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

| Food services/ coffee shop/ restaurants and bars | 1 2 3 4 5 6 7 8 9 |
| Multi-functional center (TATE/MLC) | 1 2 3 4 5 6 7 8 9 |
| Athletic field and recreational facilities | 1 2 3 4 5 6 7 8 9 |
| Teaching and lab buildings | 1 2 3 4 5 6 7 8 9 |
| Administration buildings | 1 2 3 4 5 6 7 8 9 |
| Green space | 1 2 3 4 5 6 7 8 9 |
| Libraries/ book stores | 1 2 3 4 5 6 7 8 9 |
| Resident halls /apartments | 1 2 3 4 5 6 7 8 9 |
| Parking space | 1 2 3 4 5 6 7 8 9 |

- If you have other important amenities not included, please specify in the following line.

- I would walk more if a variety of amenities were nearby.
  - Strongly disagree
  - 1 2 3 4 5 6 7 8 9
  - Strongly agree

*Thank you so much for your participation!*
Perceived Feeling

- If the traffic speed is quite high near the sidewalk, you won’t want to walk there.
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

- I prefer walking on a sidewalk with a buffer zone from the road (grass, trees or parking).
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

- I prefer walking on a sidewalk that no bike rider shares it with me (there is a bike lane aside the road).
  Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

- What else would influence you to avoid walking at a place?

- Where do you think is the most walkable place at UGA main campus and why? And what’s the score (0-100) you will give regarding to its walkability? Please indicate a place, street, building or an area.

- Where do you think is the most unwalkable place and why? What’s the score (0-100) you will give regarding to its walkability?

About you

- You are
  - An undergraduate student
  - An graduate student
  - A faculty or staff
  - A resident in Athens (none of the above)

- What are your motivations of walking? (Check all that apply to you)
  - Exercise
  - Enjoying the time with friends
  - Going to some destination
  - Aimless
  - Entertainment
  - Others _________

- The transportation mode

<table>
<thead>
<tr>
<th></th>
<th>Bus</th>
<th>Car</th>
<th>Bicycle</th>
<th>Walking</th>
<th>Motorcycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>You use the most</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You most prefer to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you so much for your participation!
Campus Sustainability Grants Program - Application Form 2015-2016

Attach the following additional proposal components to this application:

- Project Overview (Attach; 2-page limit)
- Implementation Plan (Attach; 4-page limit)
- Communications Plan (Attach; 1-page limit)
- Faculty / Staff Sponsor Letter of Support (Attach; 1-page limit)
- Additional Supporting Documents &/or Recommendations for Future Support (Attach; optional)
- List of Anticipated Grant Project Metrics (Attach; 1-page limit; see Campus Sustainability Grants Program – Reporting Guidelines for reference)

Thank you for applying for a Campus Sustainability Grant.

We look forward to reviewing your application!