

Q15.

Innovation[X] Special Call for COVID-19 Proposals

The **COVID-19** global pandemic and economic, social, and cultural disruptions it has caused will be the subject of studies for years to come. The School of Innovation is calling for proposals directly related to the study of the Coronavirus pandemic and its effects. Special consideration will be given to proposals that address community impacts of the pandemic.

Teams must consist of an interdisciplinary set of faculty members and a multidisciplinary team of 10-20 students, both undergraduate and graduate, from across the university. Proposals should demonstrate a team-based approach to a complex problem and include meaningful deliverables.

Proposals are due May 1, 2020.

Q18. Project Title

COVID-19 for Vulnerable Populations: Longitudinal Study on Evolving Community Impacts among Affordable Housing Residents and Roles of Physical and Social Environments

Q22. *Please provide the following information for the Primary Point of Contact for the Project (Project Leader)*

Q1. Prefix

Dr.

Q19. First Name

Xuemei

Q20. Last Name

Zhu

Q17. Email Address

xuemeizhu@tamu.edu

Q21. Phone Number

Q5. Gender Identity

- Man
- Woman
- Trans Man
- Trans Woman
- Genderqueer
- Non-Binary/Gender non-conforming
- Not listed above, please specify
- Prefer not to respond

Q16.
Ethnic and Racial Identity

- Hispanic/Latino/a/x
- American Indian or Alaska Native
- Asian/Pacific Islander/Desi-American
- Black/African American
- White
- Bi-racial / Multi-Racial (please specify):
- Not listed (please specify):
- Prefer not to respond

Q53. *Project Information*

Q3. Please provide brief background/context for the issue this project seeks to address. (1,200 character maximum)

With over 1 million cases in the US, the COVID-19 outbreak has brought unprecedented and pressing societal challenges. Such impacts have disproportionately affected vulnerable populations, including older adults, those with chronic conditions, minorities, and lower-income groups. COVID-19 impacts will also continue to unfold over the long term, possibly with the second wave later this year. To be better prepared for pandemics like COVID-19, interdisciplinary teams are needed to address design, planning and public health issues relevant to living in everyday community environments. This project examines the multi-faceted and evolving impacts of COVID-19 on daily living and health among affordable housing residents who bear high risk factors associated with COVID-19. They may not have the "luxury" of "social distancing" due to compact living conditions and/or the need to continue working in high-risk professions; they often have limited and unstable income; they also tend to exhibit disproportionately higher percentages of pre-existing conditions and disabilities that make them vulnerable to serious symptoms, while their access to quality healthcare may be limited.

Q8. What are the goals for this project? (3,000 character maximum)

AIMS: This project aims to understand (a) how COVID-19 affects the daily living and health of affordable housing residents in Austin, Texas; and (b) how physical and social environments help or deter the COVID-19 coping process in this vulnerable high-risk population. METHODS AND INNOVATIONS: This cross-sectional and longitudinal study is built on a strong existing collaboration with Foundation Communities—a non-profit organization and the leading provider of affordable housing in Austin. Their 22 housing properties (apartments, studios or duplexes) offer unique opportunities for this study due to their (a) locations throughout Austin, (b) diverse environmental features, and (c) diverse high-risk resident profiles. Among their 2,717 housing units, 45.2% are for households with $\leq 50\%$ of median family income (MFI), and 6.6% are for those with $\leq 30\%$ of MFI. We will assess impacts of COVID-19 on residents' daily life and health using Ecological Momentary Assessment (EMA), a data collection method that repeats sampling of subjects' behaviors and experiences in real time, in their natural environments. EMA helps to minimize recall bias, maximize ecological validity, and allows for the study of microprocesses that influence behavior in a real-world context. This method is well suited for studying community impacts of COVID-19, which are highly fluid and constantly evolving, as well as long lasting and context dependent. Although widely applied in clinical investigations, EMA has not been used as widely in social science studies related to pandemics or other ongoing community challenges. DATA COLLECTION will include 3 components. First, a baseline survey will collect information on participants' personal and household characteristics, and the impacts of COVID-19 on their (a) work and employment, (b) education and training, (c) home life, (d) social activities, (e) finances, (f) emotional health and wellbeing, (g) physical health, and (h) physical distancing and quarantine practice. Second, EMA will be pushed out periodically as a short survey through a smartphone app or text messages, to assess the changes in these 8 domains of impacts in real time and over time. Third, participants will provide real-time report (via app or messages) of physical and social environmental barriers and supports for coping with COVID-19 at time of encounter using photos and verbal descriptions. Data analysis will include regression analyses as well as advanced geospatial and machine learning methods that can help detect significant environment elements linked with specific barriers/supports. We are also proposing an innovative collaboration between researchers/educators from multiple disciplines at Texas A&M University and service providers at Foundation Communities to ensure success in outreach and recruitment, the timeliness and quality of data, and the maximum potential to provide timely support for the residents.

Q9. What are anticipated outcomes from this project? (e.g., publications, website, app, data collection for further research/grant) (1,000 characters maximum)

This project will (1) generate new knowledge about impacts of COVID-19 and relevant roles of housing and community environments, (2) inform future practice in housing and community design and public health promotion in terms of crisis mitigation and management, and (3) showcase approaches to high-impact education that bring multiple disciplines together using a project-based approach driven by real-world problems. The specific products include: • Peer reviewed publications and conference presentations; • Written reports from both the research team and the student class project teams; • Research briefs to be shared with affordable housing providers and related agencies; • An app for future use by both researchers and community organizations to track attitudes and behaviors of vulnerable populations; • Design and public health guidelines in relation to coping with pandemics through housing and community design; • Pilot data for larger external grant proposals.

Q10. Is this proposed project an extension of existing work or a new endeavor? (1,200 character maximum)

This project is an extension of team members' existing work. Two lead investigators (Zhu and Lee) are currently working on a T3 project assessing the impacts of housing and community environments on residents' physical activity, health and cost of living. The preliminary results showed that our target participants are at high risk for suffering significant impacts from COVID-19. For example, 13.7% of survey participants (n=161) have asthma or other lung/breathing problems; 22.5% have no health insurance; 32.9% reported not being able to see a doctor when needed because of the cost; 27.2% have a physical impairment or disability. Only 55.0% are employed or self-employed and 21.0% are unable to work. In addition, 46.1% of them are of Hispanic origin. Additionally, another key investigator (Ory) coordinates the public health group for the University-wide Texas A&M Emergency Management Advisory Group and has been designing relevant surveys for faculty, students and staff. She is also participating in supplemental studies regarding COVID-19 impacts for her ongoing research projects, including those in collaboration with Zhu and Lee (NIH projects R01CA197761 and R01CA228921).

Q11. Is Institutional Review Board (IRB) approval required for this project?

Yes. The research team will obtain IRB approval before starting data collection. The data collection will involve limited face to face interaction.

Q54. *Team Participants*

Q12. Please list all Team Leaders below (including yourself), including Prefix, Name, Title, and Department/School.

Q25. Do any of the team leaders listed above have plans for a sabbatical or other extended leave away from campus during the 2020-21 academic year? Note: Selecting “yes” will not automatically disqualify a team, but rather will indicate that we need to have a discussion with your team about the nature of the planned leave in relation to the project.

No.

Q26. Please list all Team Contributors below, including Name, Title, and Department/School. *Please exclude anyone you already listed as a Team Leader.*

Additional Faculty Member: • MARCIA ORY, MPH, PH.D. SCHOOL OF PUBLIC HEALTH, Regents & Distinguished Professor, Director of the Center for Population Health & Aging. Student Team Members: • 2 PH.D. STUDENTS FROM PUBLIC HEALTH. The school of Public Health has an active Health and Wellness Committee composed of faculty, staff and students who meet monthly. It has a Student Ambassador program which matches students to research, education, or practice activities. At present, there are over 50 students, and many of whom are interested in health, behavior, and environmental issues. • 1 PH.D. STUDENT FROM ARCHITECTURE and 1 PH.D. STUDENT FROM URBAN AND REGIONAL SCIENCE, with relevant research interest • 1 GRADUATE STUDENT FROM COMPUTER SCIENCE to help with the customization of an existing app for EMA • 2 MASTER OF LANDSCAPE ARCHITECTURE STUDENTS with a strong interest in designing healthy housing and communities • 3 MASTER OF ARCHITECTURE STUDENTS from ARCH 675: Health Design & Research, which includes topics such as healthy environments and infection control through design that are highly relevant to this project • 10 UNDERGRADUATE STUDENTS from ARCH 212: Social & Behavioral Factors in Design, which attracts students from different disciplines across campus and has relevant class projects about environment-behavior/health relationship that directly relate to this project

Q27. Do you plan to assign someone other than a faculty leader as a “project manager” for your team (i.e., a graduate student, postdoc, staff person)?

- Yes
- No
- Not sure yet

Q28. What would be the ideal composition of team members for this project? What majors, disciplines, skills, backgrounds, or perspectives would you like to have on the team? (1,200 characters maximum)

Our current team represents the key disciplines (Architecture, Landscape Architecture, Urban Planning, and Public Health) needed to address the proposed research questions. We will use existing and user-friendly smartphone app for EMA (e.g. PiLR EMA, Daynamica), but if funded, will further seek computer science expertise to ensure effective customization and applications for EMA. We can also draw upon a wider range of faculty input from fellows in the Center for Health Systems & Design and the Center for Population Health and Aging, both with University-wide representation.

Q29. Will your team also include any external organizations or individuals as either partners, clients, study subjects, beneficiaries of the work, etc.?

Yes. This study is built on the strong existing collaboration with Foundation Communities—a non-profit organization and the leading provider of affordable housing in the City of Austin, TX. Foundation Communities manages 22 affordable housing properties within Austin with a total of 2,717 residential units. Throughout the one-year period, researchers will prepare and share periodic research briefs with service providers at Foundation Communities to inform them about resident needs and how their services can better respond to their needs.

Q55. Travel

Q30. Does your proposal include travel for students beyond Bryan/College Station?

- Yes
- No
- Not sure yet

Q31. Where would the team travel?

Researchers, including participating students, will travel to visit the study sites (affordable housing properties and their surrounding communities in Austin, TX).

Q32. When do you anticipate that this travel would take place? (e.g., Fall 2020, Spring 2021, some other academic break, TBD)

The travel will likely take place in Fall 2020 and Spring 2021. The exact schedule will be finalized based on the development of COVID-19 and the latest public health recommendations from the CDC.

Q33. Do you expect that all students selected for the team would be able to travel, or just a select number?

Yes. All students will be able to travel.

Q56. Collaboration with Students

Q34. How will you facilitate collaborative inquiry on the team? How often and in what format will the team meet? How will you divide tasks? How you will ensure effective management of the project (e.g., appoint a student as a project manager, assign that role to a faculty leader, etc.)? (1,500 character maximum)

Dr. Zhu will serve as the faculty leader for project activities. Faculty team members will integrate this research into their graduate/undergraduate courses as a class project/exercise. Dr. Zhu and project faculty members will develop student training and collaboration protocol, including code of conduct and detailed scheduling with clear milestones and deliverables, for training those students hired for this project and those taking classes from the participating faculty. One Ph.D. student, 1 graduate student from computer science and 2 undergraduate students will be hired to directly support research activities. Other students will participate in this project through class projects, which are of direct relevance to the content of the courses they are taking. Four student teams with vertical and interdisciplinary representations will be formed for efficient and enriched collaboration experiences. Each team will include 1 Ph.D. student, 1 Master student, and 3 undergraduate students, and represented by a graduate team leader. The core research team (3 faculty members, 1 research staff, and 2 hired graduate students) will meet biweekly or weekly, depending on the project progress and specific needs at the time. The student teams will meet biweekly with their members, and also meet monthly with the core research team. The faculty members on the project will also serve as mentors for student leads for the five teams. Some of the meetings may be carried out via ZOOM.

Q35. What might students gain from their participation (e.g., conducting research directly with subjects, contributing to publications, using language skills)? What unique and differentiated learning opportunities would be available for graduate students? (1,500 character maximum)

Of special note, students from different backgrounds will learn concepts and methods in different fields, and how an interdisciplinary team approach can advance knowledge and action. They will be exposed to complex, real-world problems and challenges associated with COVID-19, and be trained to think critically, creatively, and collaboratively to approach problem-solving in a valid, ethical and team-based manner. Students will be assisting with and learning about (1) research design, including participant recruitment and survey instrument development; (2) data collection, including the baseline survey, EMA and the real-time report of environmental barriers and supports; (3) data analysis; and (4) publication preparation by participating in writing and dissemination tasks. They will also receive training about team collaboration, inter/transdisciplinary learning, and community-based research with vulnerable populations. Verbal, written, and oral communication skills will also be emphasized during the training and throughout the project. Special emphasis will be placed on utilizing diverse digital venues for conducting and disseminating research, which will be increasingly important post-COVID 19. Students will be expected to make class presentations, join community engagement activities, and interact with stakeholders.

Q57. Timeline and Budget

Q13. Identify the timeline for the project, including start, completion and major project milestones.

NOTE - You may use the text box or upload a table or file in the next question.

Q36. Timeline Upload (if needed)

[Timeline.pdf](#)

51.5KB

application/pdf

Q37. Total Budget Request (numeric response only, please).

Q38. You may upload a budget table here encompassing the categories below, or you may complete the fields below through this form as applicable.

For each item listed below or on your budget table upload, please enter both dollar amount and any relevant notes/justification.

Q39. GRADUATE OR RESEARCH ASSISTANTSHIP (PHD) (*Suggested range: \$15-18/hour; note: RAships for students in graduate school should include costs for tuition remission and fees*)

Q41. RESEARCH ASSISTANTSHIP (*Suggested range: \$12-15/hour*)

A total of \$3,000 is budgeted to hire one graduate student from Computer Science to help with the customization of an existing app for EMA.

Q40. INSTRUCTION (Teaching) - PHD STUDENT

Q42. POST-DOCTORAL OR STAFF EFFORT

A total of \$3,000 is budgeted for a research staff to provide part-time support as the project manager for this project.

Q43. UNDERGRADUATE STUDENT STIPEND OR WORK STUDY (*Suggested range: \$11-14/hour*)

A total of \$3,000 is budgeted for 2 undergraduate students to help with data entry and cleaning.

Q44. INSTRUCTIONAL, RESEARCH OR OFFICE SUPPLIES

A total of \$500 is budgeted for miscellaneous expenses such as printing, etc.

Q45. COMPUTERS AND MINOR EQUIPMENT

Q46. TRAVEL - DOMESTIC

A total of \$1,000 will be budgeted for the team to travel to study sites throughout the project period.

Q47. TRAVEL - INTERNATIONAL

Q48. CONTRACT WORK

Q49. MEETINGS - BUSINESS

A total of \$500 is budgeted for hosting meetings with community partners.

Q50. OTHER - MISC.

A total of \$3,000 is budgets as incentives for study participants.

Q51. Please briefly note below any other sources of project funds. *(Projects that match or leverage additional funds are strongly encouraged. Please note any such funds, awarded or proposed, here so that we understand the comprehensive outlay for the project.)*

N/A.

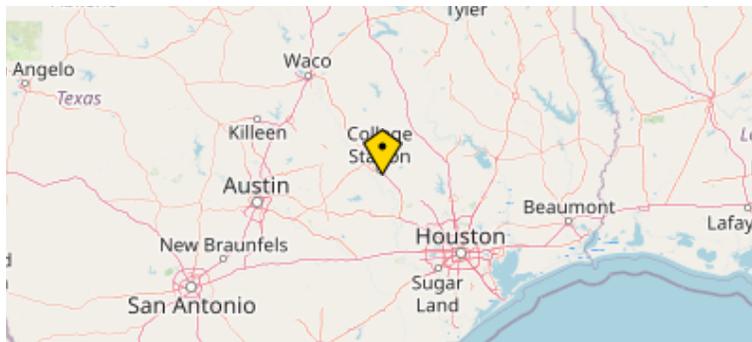
Q52. Please name a Unit/Business Manager who could administer funds for project, if requested:

Chris Novosad, Assistant Dean for Finance and Administration; Phone: 979.845.1258; Email:cjn@tamu.edu

Location Data

Location: ([30.547805786133, -96.271499633789](#))

Source: GeoIP Estimation



| Task \ Time | Jun. 20 – Aug. 20 (Pre-funding) | Sep. 20 – Nov. 20 | Dec. 20 – Feb. 21 | Mar. 21 – May 21 | June. 21 – Aug. 21 |
|----------------------------------------------------|------------------------------------|-------------------|-------------------|------------------|--------------------|
| Literature review | | | | | |
| Survey instrument development | | | | | |
| App customization for EMA | | | | | |
| Data collection | | | | | |
| Data analysis for class projects | | | | | |
| Report writing for class projects | | | | | |
| Data analysis and report writing for research team | | | | | |
| Dissemination | | | | | |