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Project Title	Contagious Phenotypes of Acute Respiratory Infection: Identification, Characterization, and Biomarkers (Characterizing And Tracking College Health (CATCH) – the Virus Study)
Purpose of the Study	<p>This research is being conducted by Donald Milton, MD, DrPH, and a team of researchers at the University of Maryland with funding from the U.S. Defense Advanced Research Projects Agency. We are inviting you to participate in this research project because you are a college student living in certain residence halls or enrolled in a particular Living Learning Community. The purpose of this research project is to identify biomarkers (measurable substances within a person) that can indicate which individuals, when exposed to viruses and bacteria that cause Acute Respiratory Infections (ARI), are likely to become contagious and spread the ARI to others, and to improve our understanding of how ARI are transmitted so that we may better prepare to mitigate or prevent future epidemics and pandemics of influenza and other ARIs.</p> <p>The location tracking smartphone app part of this study will help to identify when you may have had contact with someone who passed a virus to you, or if you are ill, whom you may have inadvertently infected with a cold or flu.</p>
Procedures	<p>If you have not already done so, the first step to participate in this part of the study will be to download the smartphone app from the appropriate App Store. Once you have downloaded it, you will be asked to register the app with our study by logging in with your UMD directory ID and password and reading and signing this consent form. Next, we will ask you to enter some personal identifiers into the phone app that will be used to create an encrypted secure ID (similar to the way a password is encrypted). Only the encrypted ID will be transmitted to the study servers. All personal identifiers will be deleted from the app immediately after creating the encrypted ID. The personal identifiers will include several things like your University ID (UID) number, last name, sex, month and day of birth, and the zip code of your permanent/home address. We will also ask you to give us your phone make and model, and phone carrier. We estimate that it will take you no more than 5 minutes to download the app and register with us.</p> <p>Once you have registered with our study, you may be asked by your phone to allow the app to have access to location services. If you agree, the app will start collecting WiFi signal characteristics from your phone such as access points nearby and signal strength, as well as GPS information. The app will send this information to a secure server so that</p>

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research study personnel can use it to identify your location when there is potential that you are part of a chain of acute respiratory infection transmission that we are following. The app will run in the background and will not require you to do anything for it to monitor location after it has been activated and given access to location services.

When we have identified cases of acute respiratory infection among app users, we will use your location information to identify the amount of time that you spent with the infected persons during periods of time when they were potentially contagious. If this can be done quickly and you are identified as a close contact and at risk of getting infected, we will contact you and invite you to enroll in follow-up testing over several days to see if you become infected.

Once activated, we would like you to keep the app continually running on your phone. The amount of time you run the app will be measured by the amount of data sent to the server. Your continued usage will enable you to be entered in to monthly and end of semester prize drawings; the more time that you use the app, the greater your chances of winning. If you later decide you wish to stop participating, you can turn off the app, stop sharing location information with the app, or choose to uninstall it. All data collected until the time of leaving the study will be saved unless you inform us by calling/texting 4242-GOTFLU (424-246-8358) or emailing catch@umd.edu or contacting Dr. Milton (see below) and telling us that you wish to have us remove all your previously collected data from our database.

OPPORTUNITIES FOR ADDITIONAL PARTICIPATION

During the academic year, we will send you short periodic emails to keep you informed about what is going on with the study and remind you about possible opportunities to participate in additional parts of the study. If you are exposed to someone who is enrolled as a case, you will be eligible to enroll for follow-up testing as a contact to see if you become infected. If you come down with a cold or flu, you may be eligible to enroll to be tested as a case of acute respiratory infection (if you are *[insert eligibility, i.e. a freshman in insert targeted programs, i.e. College Park Scholars GPH, LS, or STS programs]* or are enrolled as a contact). Before being enrolled as a case or a contact of a case, you will be asked to read and sign additional consent forms (available on our website <http://catch.umd.edu>), which fully explain in more detail what you would be asked to do.

We will periodically post general information about the study to our

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	<p>website, such as the number of enrolled participants and the number and types of infectious agents detected within the study group. Any information posted on the website will be anonymous, with no personally identifiable information about you.</p> <p>You may also be randomly selected and asked to attach a small portable CO₂ monitor to your backpack and to take it with you wherever you go for up to a week to help us measure and understand your environmental exposures. If you want to stop carrying the monitor before a week is over, you can return it early; we will retain the data collected unless you specifically request it to be deleted. In the event that you think you have lost the monitor, please notify us; you will not be charged, but can earn compensation if the monitor turns up and you return it.</p> <p>Please note that if you leave the [<i>insert targeted scholars programs, i.e. GPH, LS, or STS</i>] Scholars program and move out of the [<i>insert targeted residence halls, i.e. Cambridge Community</i>] you will no longer be eligible to participate in the study.</p>
Potential Risks and Discomforts	<p>It will take a few minutes of your time to download the app and register your phone with our server. There is a small risk to your privacy and confidentiality, because we will be collecting a your location data and this data may be possible to use to identify you even though we will not store any personally identifiable data on the location server, as described below under confidentiality. The location data on our server could pose a risk if it were to be hacked and released, extensively analyzed to figure out who it belonged to, and your location at a given time was somehow embarrassing or incriminating. When running, the app is expected to use a small amount of your phone's memory (estimated to be no more than 20 megabytes) and less than 5% of the battery; it should have minimal impact on the function of the phone.</p> <p>IF you are selected and agree to carry a portable CO₂ monitor, this will add a small amount of extra weight (approximately 10 ounces) and may be slightly inconvenient, but poses no other risk.</p>
Potential Benefits	<p>There are no direct benefits of participating in the smartphone app portion of the study. However, participating in this part of the study may increase the likelihood that you will also participate in the case and contact components of this study, and possible benefits of that participation would occur if we found that you have an infection that needs treatment. Although most ARIs do not require specific treatment (such as the viruses that cause common colds), we may occasionally identify infections that should be treated or for which early treatment</p>

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	<p>may be advantageous. Hence, there is a small chance that, through your participation as a case or contact, you might benefit from the early detection of a treatable respiratory infection.</p> <p>We hope that, in the future, other people might benefit from this study through improved understanding of how acute respiratory infections spread and identification of biomarkers that can predict contagiousness, in order to limit the spread of respiratory infections like influenza.</p>
Confidentiality	<p>Any potential loss of confidentiality will be minimized by not storing any personally identifying data in connection with the location data. If you decide to participate and use the app, we will assign you a unique ID (created on your phone) that cannot be reversed to get your personal identity without already knowing your identity and how the encryption algorithm works. All subsequent information received from your phone will only be identified by this unique ID.</p> <p>Collaborators within and outside the University of Maryland may conduct analyses on the data for research purposes, but all such data will always be de-identified. If we write a report or article about this research project or post information on the study website, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</p> <p>Any unanticipated problems involving risks to participants or others such as unexpected or serious adverse events, non-compliance, audits, and investigation reports will be promptly reported to the University of Maryland Institutional Review Board, as well as both the U.S. Department of the Navy and Space and Naval Warfare Systems Center Pacific Human Research Protection Programs.</p>
Medical Treatment	<p><i>The University of Maryland does not provide any medical, hospitalization or other insurance for participants in this research study, nor will the University of Maryland provide any medical treatment or compensation for any injury sustained as a result of participation in this research study, except as required by law.</i></p>
Compensation	<p>SMART PHONE APP INSTALLATION & REGISTRATION</p> <p>You will receive \$10 if you download the app from the App Store and register your phone with our study. This compensation payment will be made via an electronic transfer of funds to a Terrapin Express account linked to your University identification number (UID), which allows</p>

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	<p>purchase at over 50 locations on campus.</p> <p>Please Note: If you subsequently delete the app and then download and register again a second time, you will NOT receive a second payment.</p> <p>CONTINUED USE INCENTIVES</p> <p>Based on the amount of time you leave the app running, you will be entered into small monthly prize drawings (worth approximately \$25), and 2 Grand Prize drawings for \$500 (one drawing at the end of each semester), as long as you continue to be eligible to participate in the study. Grand Prize money will be loaded onto a University issued debit card, which is accepted both on and off campus. The longer you use the app the greater will be your chances of receiving the prizes.</p> <p>POSSIBLE ADDITIONAL COMPENSATION</p> <p>IF you are selected and agree to carry a portable CO2 monitor, you will receive an additional \$10 deposited in your Terrapin Express account when you return the monitor in person.</p> <p>PLEASE NOTE: We will not make any cash payments other than by electronic means. All winners will need to come to the School of Public Health in order to claim prizes, and if you are a Grand Prize winner you will be required to provide your name, address, and social security number (required by the University for tax reporting purposes on all research participants who earn more than \$100).</p> <p><i>You will be responsible for any taxes assessed on the compensation you receive during this study.</i></p>
Right to Withdraw and Questions	<p><i>Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Your academic standing as a student or employability at UMD will not be affected by your participation or non-participation in this study.</i></p> <p>Special notice for research assistants: If you are a student working on the study and are earning course credit for your work, your grade will not be affected by your decision to participate (or not participate) in this portion of the study.</p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the</i></p>

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	<p><i>research, please contact the investigator:</i></p> <p style="text-align: center;"> Dr. Donald Milton Room 2234V SPH Building 255 University of Maryland College Park, MD 20742 Telephone: 301-405-0389 Email: dmilton@umd.edu </p>	
Participant Rights	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;"> University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678 </p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>	
Statement of Consent	<p>Your electronic signature indicates that you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will be sent a copy of this signed consent form via email, which you may print.</p> <p>If you agree to participate, sign the consent by clicking on “Agree”. Otherwise click on Disagree and the smartphone app will not be activated.</p>	
Electronic Signature	<p>{ Note to IRB: Only persons logged in with their UMD Directory ID will be able to access this form. If the user clicks on “Agree” they will be allowed to register the app by entering PII and the app will send the users Location Unique ID (LUID) to the server with an indicator of agreement thus verifying the users’ identity. Thus, no additional entry of name in this signature will be required. Clicking on disagree will disable the app. }</p>	
	CONSENT OF PARTICIPANT	<p>Agree</p> <p>Disagree</p>