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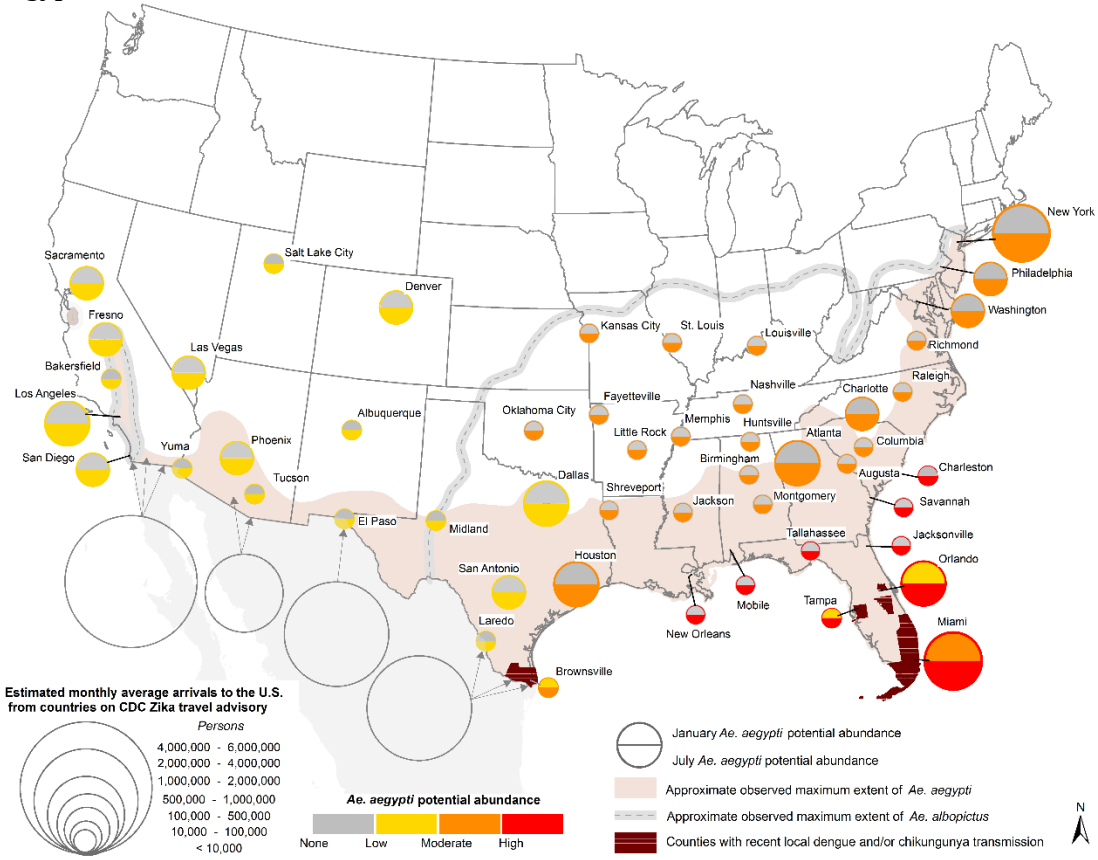
PAPER PUBLISHED ON SEASONAL OCCURRENCE AND ABUNDANCE OF THE ZIKA VIRUS IN THE UNITED STATES (email to: dale.quattrochi@nasa.gov/256-961-7887/cory.morin@nasa.gov/256-961-7812): Dr. Dale Quattrochi and Dr. Cory Morin (NASA Postdoctoral Fellow) are co-authors on a paper that was published in the journal *PLoS Currents Outbreaks* entitled "On the Seasonal Occurrence and Abundance of the Zika Virus Vector Mosquito *Aedes Aegypti* in the Contiguous United States". This paper which has received much national press, focuses on the use of meteorologically driven models for 2006-2015 to simulate the potential seasonal abundance of *Aedes aegypti* mosquitoes, the vector for the Zika virus, for fifty cities within or near the margins of its known range in the U.S. Mosquito abundance results were analyzed alongside travel and socioeconomic factors that are proxies of viral introduction and vulnerability of human-vector contact. This research can help us anticipate the timing and location of possible Zika virus outbreaks in certain U.S. cities this summer. As the figure below illustrates, the simulations show that the East Coast as far as New York City and across the southern tier as far as Phoenix and Los Angeles experience conditions conducive for *Aedes aegypti* survival and Zika virus introduction.



U.S. map showing 1) *Aedes aegypti* potential abundance for Jan/July (colored circles), 2) approximate maximum known range of *Aedes aegypti* (shaded regions) and *Aedes albopictus* (gray dashed lines – the mosquito prevalent in the U.S. that at this time is not known to be a Zika virus vector), and 3) monthly average number of arrivals to the U.S. by air and land from countries on the CDC Zika travel advisory.

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NASA SEVERE THUNDERSTORM OBSERVATIONS AND REGIONAL MODELING (STORM) PORTABLE LIGHTNING MAPPING ARRAY SITES DEPLOYED (email to: christopher.j.schultz@nasa.gov/256-961-7856: The Earth Science Office has developed a new portable lightning mapping array package through the funding for the NASA Severe Thunderstorm Observations and Regional Modeling (STORM) project in the last month. Three portable sensor packages were built during this time frame and have been deployed in three separate locations across the Tennessee Valley: Fayetteville Municipal Airport, Fayetteville, TN, Lynchburg, TN and Trinity, AL. The main purpose of these sensors are to test the sensor design for future mobile/remote deployments for field programs which require high resolution lightning mapping. The secondary goal for this spring is to complement NASA's North Alabama Lightning Mapping Array (LMA) which extends the LMA's footprint for monitoring total lightning and allows the office develop a technique for combining LMA data sources which operate at two slightly different frequencies.

This new package differs from the long standing NASA North Alabama LMA in the fact that the sensors do not need to be tethered to a power sources or local internet port and they are more compact. This new LMA sensor package is transportable, solar powered and data are transmitted via cell phone modem, making the instrument package deployable anywhere and providing the Earth Science Office a new capability for lightning measurements in the field. Most importantly it typically takes the new portable station less than 2 hours to become fully functional, which in past deployments of fixed site LMA sensors used to take a full two days to install.

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ZP13 PRESENTATION TO ZP11 TO SEEK ATMOSPHERIC SUBJECT MATTER EXPERT FOR SASSI MISSION DEFINITION TEAM (email to: linda.h.krause@nasa.gov/256-961-7367): Dr. Linda Krause (ZP13) gave a short presentation on an ISS mission concept to study atmosphere-ionosphere connections to ZP11 at their staff meeting on March 29, 2016. The purpose of the presentation was to explore an opportunity for collaboration between ZP11 and ZP13 by including ZP11 subject matter expertise on the ZP13-led Situational Awareness Sensor Suite for the ISS (SASSI) mission science definition team. One of the primary science objectives of SASSI is to discover what triggers ionospheric storms (i.e., plasma turbulence events) that cause outages in space-based communication and navigation systems, such as global positioning systems (GPS). A relatively new theory is that Sudden Stratospheric Warming (SSW) events play a major role in preconditioning the ionosphere to be susceptible to these storms. The outcomes of the presentation are ongoing due to the gracious dedication expressed by ZP11 leadership and members, and we have an initial lead on a potential candidate who may be a good fit. Future updates will be forthcoming as these outcomes unfold.