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June 8, 2020

Diné College (Navajo Nation)

Diné College Profs Believe More Reasons Behind High Covid-19 Cases on Navajo

FOR IMMEDIATE RELEASE

May 31, 2020

TSAILE, Ariz.— A research paper authored by two Diné College science professors about the coronavirus (COVID-19) pandemic and its impact upon Native Americans provides clarification of the transmission and virulence of the virus, the professors say.

The paper, *[The Medical Basis for Increased Susceptibility of COVID-19 among the Navajo and other Indigenous Tribes: A Survey](#)*, written by Joseph DeSoto, MD, Ph.D., and Shazia Tabassum Hakim, Ph.D., concludes, in part, that "...ethnic and anatomic expression patterns of angiotensin converting enzyme 2 (ACE2) and associated pathophysiology suggests that Native Americans and Asians may be particularly susceptible to this disease (Covid-19)."

The paper was submitted April 30 and accepted for publication May 29 in the *Journal of Biomedical Research and Reviews*. DeSoto and Hakim said the document represents the first comprehensive world-wide scientific understanding of the high rate of infectivity among the Navajo and Indigenous tribes of the SAR-CoV-2 from a molecular medical perspective on Covid-19.

Angiotensin Converting Enzyme 2 (ACE2) is a type of protein found on the surface of a number of cells in the respiratory, digestive, nervous and reproductive systems. The protein, in general, serves as a door where the virus enters the cells, the team explained.

"And the key that the virus has is to open the door is a spike with the protein S," Hakim explained. "When this right key "S" is inserted into the door lock (ACE-2), the magic happens and the virus enters the host cell, hijacks the host cell's DNA machinery and starts producing its own proteins, multiplies, increases in number and infects more cells of the host body."

"There are four things that aggravate COVID-19 as it pertains to the Navajo Nation," De Soto said. "Medically, it's the high rate of diabetes, hypertension, genetics and poor protein diets among the Navajo; poor health care infrastructure and technology; poverty, with the associated lack of water access; and dense multi-generational living arrangements.

The two professors work in the Science, Technology, Engineering and Math (STEM) division of the Diné College. They said in December that they started talking amongst themselves about the causes of COVID-19, and then started reviewing the literature.

"Late in December 2019, we read every single thing that was published out there in the scientific community," DeSoto said. "We discussed it and evaluated it long before the virus came over here. Then based on the best medical evidence, we realized that this might soon be a problem. So, we started discussing, evaluating and analyzing and then we wrote and completed the paper."

Two more papers are also being published within weeks in major peer reviewed Medical and Scientific Journals by De Soto and Hakim, *"The Medical Treatment for COVID-19,"* and with

National Indian Gaming Commission

The National Indian Gaming Commission is pleased to announce a series of COVID-19 Guidance Outreach calls. Please save the date for the next call on June 10, 2020 at 2:00 p.m. Eastern time.

Navajo Nation Town Hall (Arizona, New Mexico, Utah)

Please join Navajo Nation President Jonathan Nez and Vice President Myron Lizer for another online town hall on June 9, 2020.

Fred Boyd, Ph.D., of Dine College, a well-known molecular physiologist, "*The Pathophysiology of COVID-19*," both of which have already received international attention via preprints.

The Navajo Nation has the highest COVID-19 rate in the United States which is 450% higher than the national average.

DeSoto, M.D., Ph.D., who was senior author and is a medical school graduate of Howard University. His specialty is molecular medicine and pharmacogenetics. Hakim, Ph.D., has a background in microbiology and infectious diseases. She is a graduate of the University of Karachi in Pakistan.

Hakim said she and DeSoto are working on another manuscript related to the eating habits, food scarcity and the unavailability of the varieties of fruits and vegetables in Navajo communities.

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The Indian Health Service has updated its coronavirus testing data, showing 13,487 COVID-19 cases as of June 8, 2020.

Navajo Nation (Arizona, New Mexico, Utah)

The total number of positive COVID-19 cases for the Navajo Nation has reached 6,150 as of June 9, 2020. Nearly 2,900 people have recovered from the coronavirus on the largest reservation in the United States.