

DSU Professor Recounts His Experience In Japan During Earthquake

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Dr. Gabriel Gwanmesia and his host, Professor Toru Inoue stand in front of a high pressure press at Ehime University

Dr. Gabriel D. Gwanmesia, professor of physics, left for a two-month research sabbatical in Japan on Jan. 29, looking forward to sharing his expertise on high pressure physics with the scientists of that country and utilizing the geodynamic technology there.

Little did he know that he would be witness to the greatest earthquake to ever hit Japan.

Dr. Gwanmesia – who is also a DSU alumnus – was on a 60-day research fellowship funded by the Japan Society for the Promotion of Science on March 11 and was just leaving a dedication ceremony for a new high pressure neutron lab in the village of Tokai-Mura in Japan’s Ibaraki Prefecture.

The DSU physics professor said he knows almost the exact time he first felt the 9.0 magnitude earthquake – 2:48 p.m. Japan time – because he almost instinctually pointed his camera at a wall clock and took a picture of its hands position.

Just before that he was in an elevator, which the earthquake caused to hit against the shaft wall surrounding it.

“The elevator stopped at the 2nd floor and when the doors opened, I dove out,” Dr. Gwanmesia said.

He said Tokai-Mura – just north of Tokyo in the central part of the country – was about 150 miles from the epicenter of the earthquake. And while that Japanese village was out of harm’s way from the raging tsunami that ravaged northern Japan, it still suffered significant damage from the powerful quake tremors.



The above photo taken by Dr. Gwanmesia shows the damage to roads wrought by the earthquake.

Dr. Gwanmesia said he and the other people who were in the lab all poured outside, where the damage was already apparent.

“The vibrations were very severe, causing significant damage to buildings and creating cracks and breaks in the road pavement,” Dr. Gwanmesia said.

During his two-month fellowship, the DSU physics professor was residing mostly on the Japanese island of Matsuyama on the southern end of the country – which was not directly impacted by the earthquake. As fate would have it, he and his host had flown to Tokyo to get to the neutron lab dedication on the same day as the quake.

Their plan to return to Matsuyama that day was delayed. That night Dr. Gwanmesia spent the night with 50 other people in an emergency shelter.

He said the Japanese people were clearly shaken by the quake and resulting damage, but were not frantic or disorderly.

“There was no electricity or running water, but when resources like blankets and other things were made available, there was no fighting or rushing to get them,” Dr. Gwanmesia said. “People just patiently waited their turn.”

The following day, the DSU professor’s host managed to get him back to Tokyo where he was able to catch a plane to return to Matsuyama. Once back there, he proceeded to complete the rest of his fellowship research at Ehime University, located on that island.



During his trip, Dr. Gwanmesia observed the process by which a high pressure press converted graphite into the above diamonds.

In the days following the initial quake, Dr. Gwanmesia said he received “tons” of email from worried friends and family urging

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him to get out of the country.

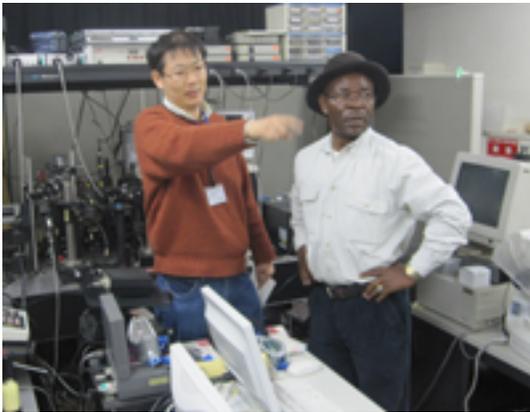
“I just laughed because (in Matsuyama) we were so far away from the area that was really hit by the earthquake,” he said.

Dr. Gwanmesia said it is a Japanese health custom for people to wear face masks when they have a cold to prevent its spread. He laughingly recalled that one of his nieces saw a Japanese man wearing a mask during the news coverage of the quake, prompting her to write her uncle and tell him to wear a mask to protect him from the danger of radiation.

“Matsuyama was far from the radiation danger area,” Dr. Gwanmesia said. “And even if we were in the danger area, radiation passes through the body. A face mask would provide no protection.”

Far removed from the danger, Dr. Gwanmesia continued his research work that involved utilizing Ehime University’s geophysics facility to produce synthetic minerals he could bring back to DSU and continue his study of materials that exist deep in the earth.

Because those minerals deep in the earth cannot be accessed, scientists have to create synthetic versions of the same minerals to study.



Professor Hitoshi Yusa (l) shows Dr. Gwanmesia a lab during a visit to Japan's National Institute for Material Science.

“Such studies allow us to understand the causes of earthquakes,” Dr. Gwanmesia said.

The physics professor said his research interests in mineral physics are dedicated to understanding the behavior of sound waves as they travel through different materials. In addition to gaining a better understanding concerning how the earth has evolved, data from such study can yield valuable information in evaluating the causes of earthquakes, hurricanes or other natural disasters.

In addition to creating synthetic material for his future research, Dr. Gwanmesia also observed the high pressure conversion of graphite into diamonds at the Geodynamic Research Center at Ehime University.

Dr. Gwanmesia earned a Bachelor of Science Degree in Physics and Mathematics from then-Delaware State College in 1985, and went on to obtain a Ph.D. in Geophysics (Mineral Physics) from the State University of New York at Stony Brook. A native of Cameroon, West Africa, Dr. Gwanmesia has been a DSU faculty member since 1991.

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