

1 Stephen J. Solarz Memorial International Laboratory – bilateral collaboration with the US 2 National Cancer Institute

3 Lung cancer, tracheal and bronchial cancer are showing an increasing trend year by year,
4 especially lung cancer, which has the highest mortality rate among all cancers in both Taiwan
5 and the United States. Although most patients in Taiwan and the United States are diagnosed
6 with lung adenocarcinoma, there are significant differences in gene mutations. Most
7 Taiwanese patients have EGFR (epidermal growth
8 factor receptor) gene mutations, while the majority of
9 patients in the United States have KRAS gene
10 mutations, and only about 10% of patients have EGFR
11 gene mutations. Identifying the type of gene mutation
12 is a prerequisite for clinicians to choose lung cancer
13 treatment strategies and target drugs. Different gene mutations also mean that there should
14 be different treatment strategies between Caucasian and Asian populations. **Stephen J. Solarz**
15 **International Laboratory**, located at the Taipei Veterans General Hospital, is a joint venture
16 between Taiwan and the United States, and the first cross-border
17 collaborative laboratory established overseas by the US National
18 Institutes of Health. Its aim is to explore the differences in cancer
19 genes between Asians and Westerners, hoping to develop more
20 precise clinical treatment methods by understanding the factors that
21 cause these differences.



Stephen Joshua Solarz

22 Mr. Stephen J. Solarz served as a member of the United States House of Representatives
23 for nearly twenty years during his lifetime. He was very friendly towards Taiwan and presented
24 several bills in Congress in support of Taiwan. He also visited Taiwan many times and provided
25 support for Taiwan in various ways. After the former congressman Solarz passed away, his wife
26 Nina K. Solarz established a foundation in his name to support the National Cancer Institute
27 (NCI) of the United States in cancer research and treatment. The foundation also provided
28 opportunities for Taiwanese doctors to conduct research in the United States.

29 The National Cancer Institute (NCI) is a part of the National Institute of Health (NIH) in the
30 United States. It was established in 1937 and is responsible for basic cancer research, treatment
31 development, and clinical trials for new drugs. It is one of the most important and top cancer
32 research institutions in the United States and the world. With the support of the Solarz
33 Memorial Foundation, the foundation and the NCI came to Taiwan multiple times in 2017 to
34 seek potential partners for collaboration. The research capabilities of the Taipei Veterans
35 General Hospital and National Yang-Ming University stood out. After more than a year of
36 discussion, the Solarz Memorial International Laboratory was officially launched in 2019.



37 Several scientists from the United States will be stationed at Taipei Veterans General Hospital,
38 focusing on researching the genomic and epigenomic differences of lung cancer and upper
39 respiratory tract cancer between Eastern and Western populations.

40 This is a large-scale Taiwan-US collaborative research project. The US side will be led by
41 Dr. David Schrump, the chief of the Thoracic and
42 Gastrointestinal Oncology Branch at the National Cancer
43 Institute, and the Taiwan side will be jointly led by Dr. Shih-Hwa
44 Chiou, the head of the Medical Research Department at Taipei
45 Veterans General Hospital, and Dr. Mu-Hua Yang, the Vice
46 President of National Yang-Ming University and the director of
47 the Center of Excellence for Cancer Metabolism. The
48 multinational collaboration laboratory will combine the
49 genomics science and pathological expertise of the team to
50 study the differences in tumor characteristics among different ethnic groups, including tumor
51 immunology, cancer stem cells, and precision medicine.

52 This is the first overseas cooperative laboratory that NCI established. Special thanks to the
53 American Institute in Taiwan, the Ministry of Foreign Affairs, and the Ministry of Education for
54 their assistance in the negotiations between Taiwan and the US. This bilateral cooperation is
55 of great significance in addressing the important issues on lung and upper respiratory tract
56 cancers as well as the development of advanced treatments. It is highly anticipated for
57 achieving a win-win situation for Taiwan and the US, as well as patients, and reducing lung
58 cancer mortality rates.



59 **Chronicle of the Cross-National Collaboration between TVGH and NCI:**

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- 61 1. February 2017: Nina K. Solarz, the widow of the late US Senator Stephen J. Solarz, David
62 Schrump, Director of NCI, and others visited various medical centers in Taiwan to seek
63 suitable partners for establishing a cross-national laboratory. They visited the TVGH-
64 NYCU team for the second time.
- 65 2. August 2017: The Stephen J. Solarz Memorial Fund and Dr. Schrump's team selected the
66 TVGH-NYCU team to collaborate and establish a cross-national laboratory.
- 67 3. April 2018: The TVGH-NYCU team visited the US to discuss matters related to setting up
68 the collaboration laboratory.
- 69 4. January 2019: TVGH and NCI signed an official memorandum of understanding for the
70 Taiwan-US Cancer Laboratory cooperation through the North American Affairs Bureau of
71 the Ministry of Foreign Affairs and the American Institute in Taiwan.
- 72 5. March 2019: Nina K. Solarz and the NCI team, led by Director Schrump, visited TVGH to
73 listen to presentations and held a press conference to officially announce the Taiwan-US
74 bilateral lung cancer research collaboration. The bilateral collaborative research proposal
75 were started being discussed.
- 76 6. September 2020: TVGH and NCI signed the cross-national collaboration laboratory
77 execution plan through the North American Affairs Bureau of the Ministry of Foreign
78 Affairs and the American Institute in Taiwan. The plan includes a five-year Taiwan-US
79 bilateral medical research project on lung cancer.
- 80 7. The collaboration laboratory is located on the 9th floor of TVGH Medical Technology
81 Building and focuses on lung cancer stem cell research, lung cancer tumor
82 immunomodulation, and biomarkers for developing precision medicine for lung cancer.
- 83 8. TVGH, NYCU, and NCI hold trilateral online academic meetings every month with

84 participating scholars and clinical physicians from all three parties.

85 9. September 2021: The Taiwan-US bilateral international collaboration laboratory held the

86 "Taiwan-US Lung Cancer Research Bilateral Conference and Cross-National Laboratory

87 Launch Ceremony" on September 24, 2021, both physically and online. This was the first

88 research publication from the cross-national laboratory, and scientists from both sides

89 shared their research insights on lung cancer and upper respiratory and digestive tract

90 cancer through video conferencing. After the conference, the American Institute in

91 Taiwan praised this bilateral collaboration milestone on its official Facebook page.

