

**Capitol Hill Hearing on Export Controls**  
**Rayburn House Office Building**  
**Washington D.C.**  
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I am here this afternoon as a faculty member of Stanford University Aeronautics and Astronautics department and as an educator promoting worldwide student education using student built small satellites called CubeSats.

I have been at Stanford since 1994 working with graduate students in the development of small satellites. To date our students have either completely built or work in collaborative efforts to launch five satellite missions. Three of the missions have been launched on US launchers – two on the Minotaur and one on the Lockheed Martin Athena. The other two were launched on Russian launchers.

At Stanford and the California State Polytechnic University, we developed the CubeSat which I show to you today. We can add these parts which can be purchased at Radio Shack and other educational parts suppliers and build a satellite that will work in space. It is an ITAR controlled device because it is classified as a “space technology”. I can add the same technology here to an RC controlled car that we give to children as presents and it is not ITAR controlled.

**How has the ITAR restrictions affected our educational effort?**

The largest direct effect on our space education work is the added cost and delays that we experience in getting a foreign launch. We have been forced to use foreign launches since we have had no interest from US launch services or prohibitive costs and long delays for our small satellite payloads. We use the California State University Foundation launch services for foreign launches. Only the Cal Poly Foundation has registered as an “Arms Export Dealer” to work with the Department of State for an export license. We have in the past asked the administration at Stanford University to consider being registered as an “Arms Export Dealer”, so that we could work on ITAR related projects.

Since the antiwar riots at Stanford in the 1960’s they no longer work on any classified military projects or directly working on projects with ITAR restrictions.

We have, however, found that the US Department of State has been very cooperative with Cal Poly’s faculty and students that provide the service through the university foundation.

### **How does ITAR affect foreign technology development?**

The restrictions placed on US business and other barrier that it causes is accelerating technology development in foreign countries. If nations like China want new technology, there are no significant restrictions from getting that outside the US. It also leads to incentives to do more research and development by foreign countries so they are less dependent on US technology.

#### **In Summary**

The ITAR restrictions cause delays and increase costs for educating students for the US space business. We have a large portion of foreign students in our research programs. These research programs have made significant contributions to the US technology in many ways. We, however, cannot take advantage of all of the talent from these graduating research students due to ITAR restrictions on hiring foreign nationals in the space business.

#### **Recommendations**

We need a continuing dialog and review of the ITAR rules to make sure that the restrictions really do accomplish the goal of restricting the transfer critical military technologies and not impact areas and process which are detrimental to US technical education and foreign trade for the space businesses.