The authors in this article were able to determine for a 32-bit system that ASLR was not an effective defense for buffer overflow attacks. In their experiments it took them only about two hundred seconds to create an overrun that allowed them to obtain a remote shell on the Apache application they were using. This showed that brute force attacks were both efficient and effective. However, if you increase the “granularity” of the randomization you can make the brute force algorithms less efficient. We should care about these finding because buffer overruns are a serious software security flaw and a method that was once thought could thwart most of these types of attacks was rendered null and void by the experiment described in the article.

Shacham, Hovav, et al. "On the effectiveness of address-space randomization." *Proceedings of the 11th ACM conference on Computer and communications security*. ACM, 2004.