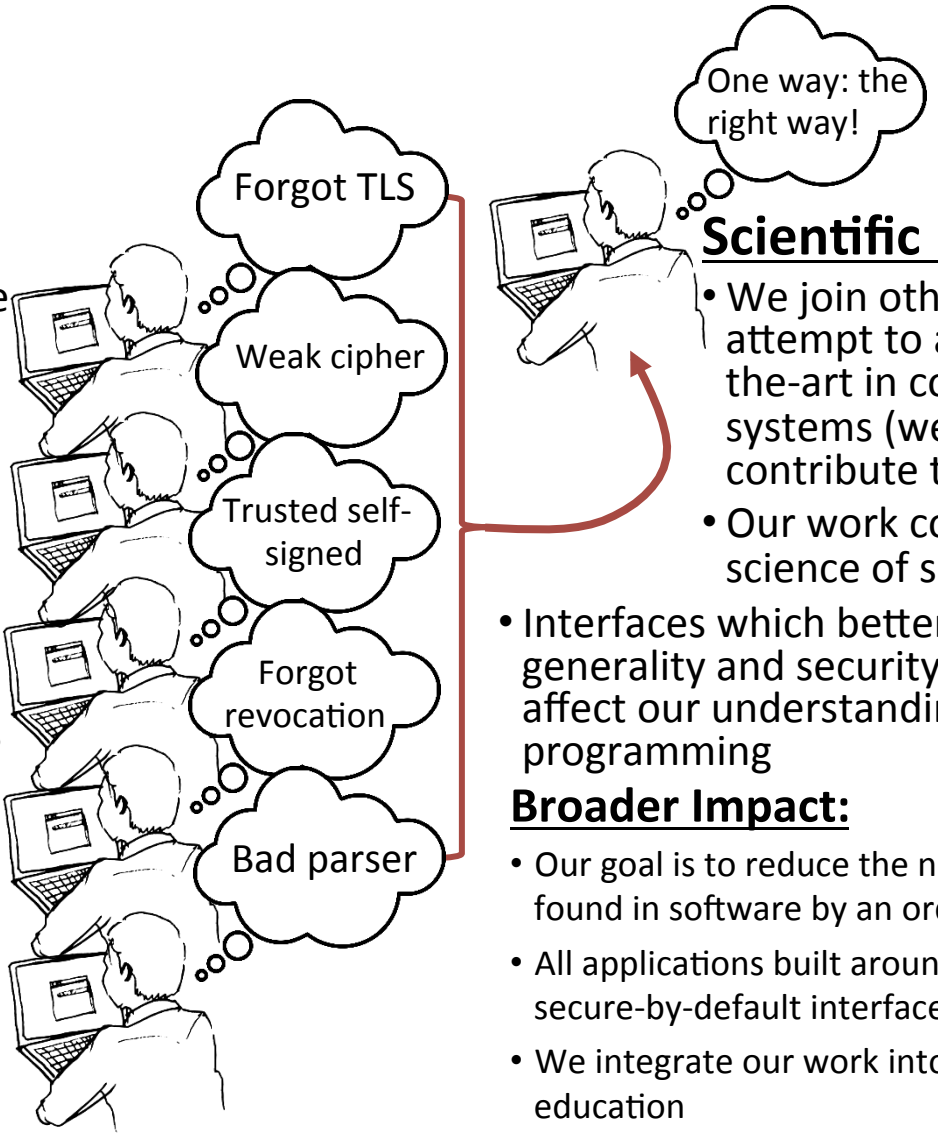
Next-Generation Robust Software

Challenge:

- The current software base is woefully unprepared for the threat found on the Internet
- This results in the prevalence of misconfigured, misused, mis-implemented, and inadequate security protections

Solution:

- Rethink the interfaces provided by the lowest levels of the software stack, especially the OS kernel
- Provide interfaces which are secure-by-default
- Find such interfaces which remain general enough to be made mandatory



Scientific Impact:

- We join other researchers who attempt to advance the state-of-the-art in constructing secure systems (we are inspired by and contribute to the Ethos project)
- Our work contributes to the science of secure programming
- Interfaces which better balance generality and security will profoundly affect our understanding of secure programming

Broader Impact:

- Our goal is to reduce the number of security flaws found in software by an order of magnitude
- All applications built around more modern and secure-by-default interfaces will benefit
- We integrate our work into undergraduate education

- libtlsep: https://www.flyn.org/projects/libtlssep/
- SimpleFlow: https://www.flyn.org/projects/SimpleFlow/
- 2016-CDX-USMA Dataset: https://www.flyn.org/CDX/index.html

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United States Military Academy
W. Michael Petullo
William.Petullo@flyn.org