

NSF Activities in Cyber Trust

June 12, 2003

Carl E. Landwehr, Ph.D.
Program Director
National Science Foundation
clandweh@nsf.gov
+1 703-292-8936

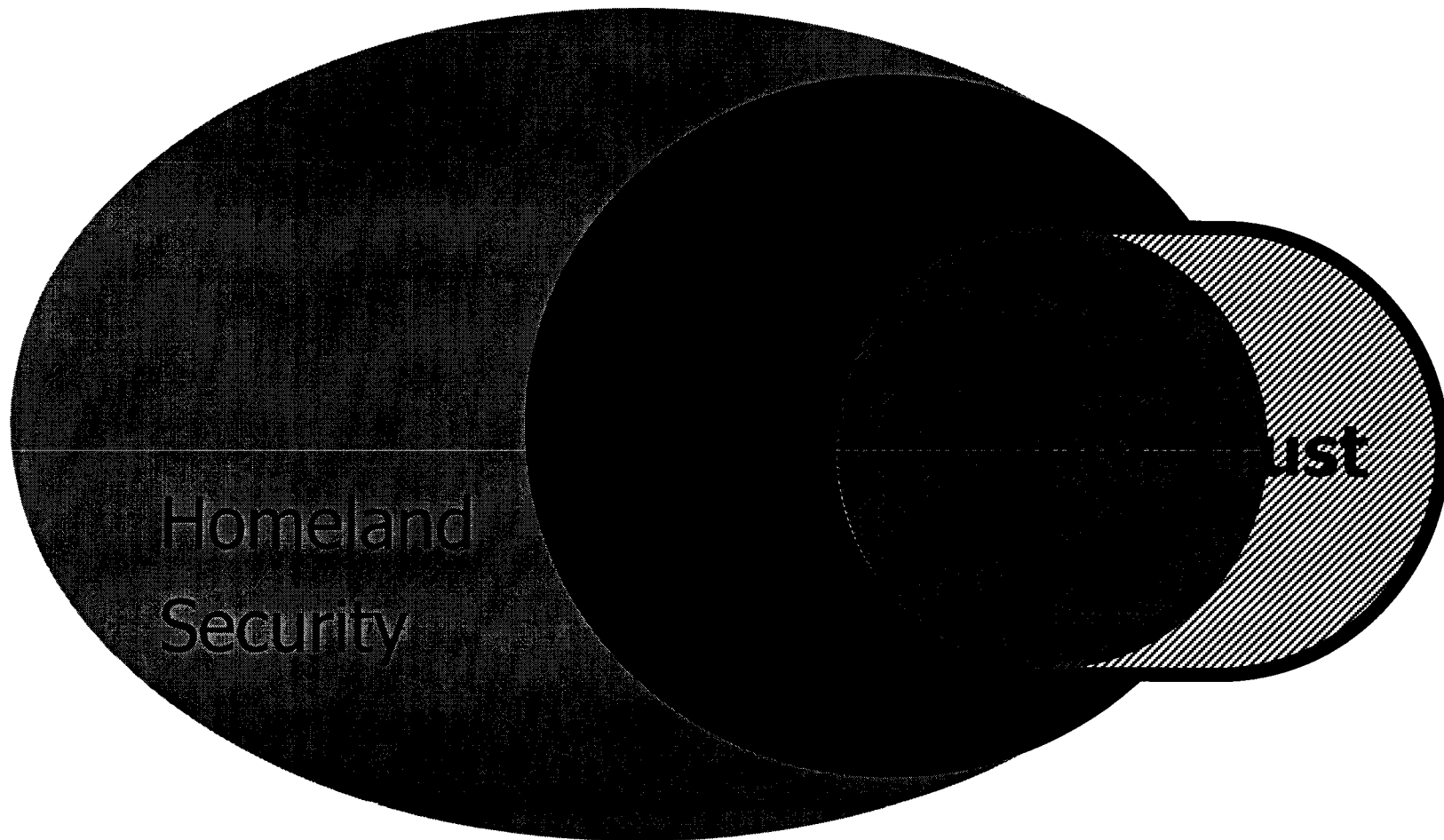
Cyber Trust Vision

Society in which

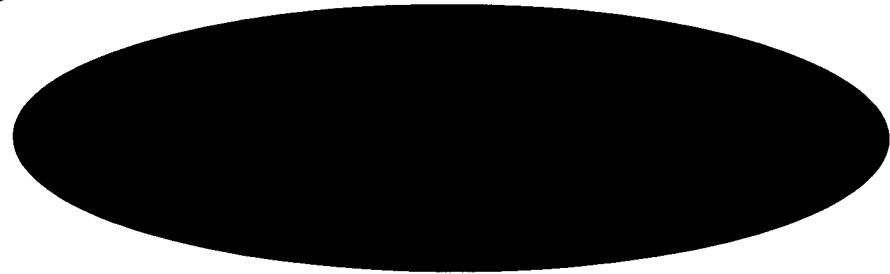
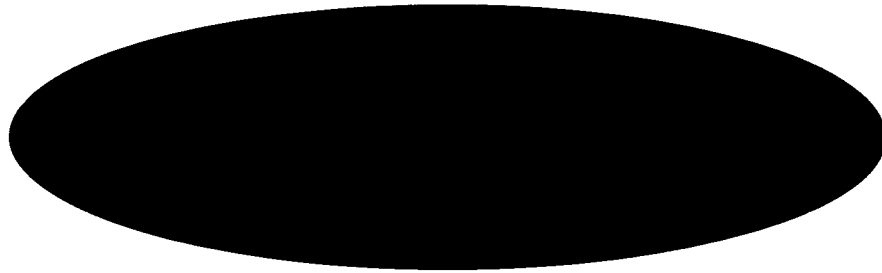
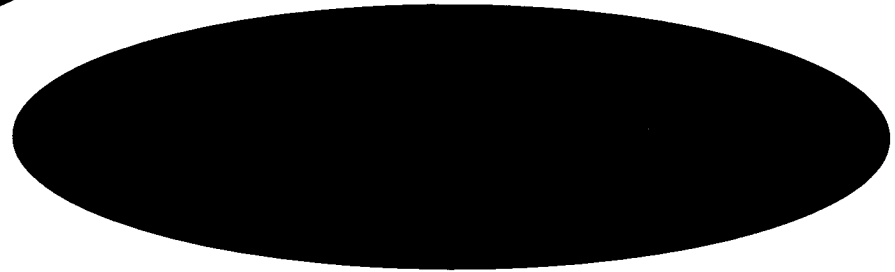
- People can justifiably rely on computer-based systems to perform critical functions
 - national scale infrastructures: water, power, communication, transportation, ...
 - localized systems: cars, homes, ...
- People can justifiably rely on systems processing sensitive information about them to conform to public policy
 - health, banking, libraries, e-commerce, government records

Without fear of sudden disruption by cyber attacks

Homeland Security
Critical Infrastructure Protection
Cyber Security
Cyber Trust



Cyber Trust Programs



Cyber Security Research and Development Act (CSRDA) - Authorization Bill

- **P.L 107-305 passed by Congress and signed by President Nov. 27, 2002**

NSF Program	FY03	FY04	FY05	FY06	FY07	Total
Research Grants	\$35M	\$40M	\$46M	\$52M	\$60M	\$233M
Research Centers	\$12M	\$24M	\$36M	\$36M	\$36M	\$144M
Capacity-bldg grants	\$15M	\$20M	\$20M	\$20M	\$20M	\$95M
Grad T'ships in CNS Res	\$10M	\$20M	\$20M	\$20M	\$20M	\$90M
Cyber Sec Fac Dev T'ships	\$5M	\$5M	\$5M	\$5M	\$5M	\$25M
1992 S&AT Act	\$1M	\$1.25M	\$1.25M	\$1.25M	\$1.25M	\$6M
Total	\$78M	\$110M	\$128M	\$134M	\$142M	\$593M
NIST Program						
Comp. Sec Res Pgm	\$25M	\$40M	\$55M	\$70M	\$85M	\$275M
CSSPAB	\$1.06M	\$1.09M				\$2M
Intramural Res	\$6.0M	\$6.2M	\$6.4M	\$6.6M	\$6.8M	\$32M
Total	\$32M	\$47M	\$61M	\$77M	\$92M	\$309M

Caution:

This is AUTHORIZATION (legal authority to spend) vs. APPROPRIATION (providing funds).

NSF Plans for CSRDA

- Direct significant portion of FY03 appropriation increase to Cyber Trust research programs (~\$15M)
- Expand strategy to improve nation's ability to produce systems for tomorrow that are
 - simpler to operate
 - less vulnerable
- Validate / update assumptions underlying the strategy
- Explore thrust areas through expert workshops

Cyber Trust Research Program Plans

- Publish Cyber Trust announcement
- Build the Cyber Trust research community
 - Cyber Trust PI meeting 13-15 August, Baltimore
 - Open to interested researchers as well as PIs
- Coordinate with other Government research funders:
 - Infosec Research Council
 - see <http://www.infosec-research.org/programs.html> for related research program announcements
 - National IT R&D Working Group: HCSS
- Support research agenda development activities

Other current NSF activities related to Cyber Trust

- Research in other programs touching Cyber Trust issues (e.g., crypto in Theory of Computing, improved software engineering methods, etc.)
 - touchstone: does the work consider malicious actions vs. random failures?
- MAGIC - middleware infrastructure for Grid computing, incorporating security functions
- Scholarships for Service program
 - Tuition grants, up to Masters level, with service obligation, at specific institutions
 - Capacity building grants

Cyber Trust related activities

- Coordination with Dept of Homeland Security as it builds capability in Cyber Security
- Coordination with NIST as it develops CSRDA plans
- Mutual review of proposals and programs with other government agencies
- International coordination of related activities -- e.g. Canada, EU
- Monthly Washington Area Trustworthy Systems Hour:
announcements:
 - <http://www.cise.nsf.gov/evnt/webcasts/watsh/index.html>webcasts/slides archived at:
 - <http://www.ngi-supernet.org/conferences.html>

Concluding thoughts

1. NSF is planning for increased resources authorized by CSRDA
2. Regardless of the threat, today's systems are way too vulnerable
3. There is an opportunity now for increased investment in this area
 - Trusted Computing
 - Trustworthy Computing
 - CSRDA
 - DHS
4. Unless we can demonstrate measurable improvements, the investments will be short-lived
5. NSF is interested in your thoughts as to how to improve the research infrastructure for Cyber Trust

Thank you.