

Developing and Using Cybersecurity Case Studies for Instruction
NSF-SaTC Funded Workshop¹
Workshop Content Overview
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Dates: 29-30 June 2015
Location: Muma College of Business, *University of South Florida*, Tampa, FL
Intended Participants: Faculty and doctoral students interested in using the case method, developing discussion and research cases, and employing discussion cases in the classroom and online. The specific topic focus of the case studies will be cybersecurity, however the techniques being described generally applicable to technology and business case studies.

Background: The workshop is principally intended to introduce current and future faculty members to the use of the *case method* as a means of instruction. It is funded as part of a 2-year project that was funded by the *Secure and Trustworthy Computing (SaTC)* program of the U.S. *National Science Foundation* (NSF Award #1418711, “EDU: Developing Open Authentic Case Studies for a MS in Cybersecurity Capstone Course”) specifically intended to develop case studies for use in a cybersecurity curriculum.

The Case Method: The case method is an interactive teaching method that involves using a detailed description of a real world decision situation to stimulate an in-depth classroom discussion, typically lasting 75 to 90 minutes. The principal pedagogical objective of the approach, which was originally developed and refined at *Harvard Business School*, is to help students improve their *judgment under conditions of considerable uncertainty and ambiguity*. As such, the case studies developed to support these discussions rarely have a “right” answer and the actual outcome associated with a particular decision tends to be less important than the process through which the decision was reached.

Workshop Objectives: The 2-day workshop is intended to provide participants with an in-depth look at the case method, with a particular emphasis on its application to cybersecurity situations. Topics to be covered will include:

- *Types of case studies and their application:* The term “case study” means many things to different people. A framework for understanding the various types of case studies and their appropriate uses will be introduced.
- *Facilitating case discussions:* Each day will begin with a facilitated discussion of a cybersecurity case study developed as part of the project. Workshop participants will experience the process from the student’s perspective.
- *Developing discussion cases:* The steps in the process of developing a discussion case will be examined, with particular attention being given to the ins-and-outs of cases profiling decisions in external organizations.
- *Evaluating learning:* A variety of techniques used to assess student learning developed as part of the project will be described, emphasizing the broader challenge of evaluating judgment.
- *Publishing discussion cases:* Outlets for publication of peer-reviewed discussion cases will be examined, as well as other outlets through which cases can be distributed.

¹ This workshop is funded by NSF Award 1418711. Any opinions, findings, and conclusions or recommendations expressed in this material provided or presented in the workshop are those of the facilitator(s) and do not necessarily reflect the views of the National Science Foundation.

Workshop Logistics and Costs: There is no cost for the workshop itself, however a deposit of \$100 may be required that will be refunded upon completion of the workshop. Breakfast and a light lunch will be provided to participants at no charge, as will a copy of the book developed for the workshop (*Informing with the Case Method* by T. Grandon Gill, 2011, Informing Science Press).

Once a cap of 30 attendees has been reached, no further participants can be accommodated.

Organization

Tentative Workshop Schedule

Dates are relatively firm but specific activities are subject to change based on availability of panelists and guests, as well as participant interests.

Time	Prior to the Workshop	Monday 6/29/2015	Tuesday 6/30/2015
8:15-9:00	<p><i>Assignment:</i> Prepare two cybersecurity discussion cases for discussion in the classroom.</p> <p>These cases will not require extensive prior knowledge of cybersecurity technology or issues, although reasonable familiarity with the application of IT in business and research contexts would be beneficial.</p>	Continental breakfast	Continental breakfast
9:00-10:45		Case discussion & Debriefing	Case discussion & Debriefing
11:00-12:00		<i>Exercise:</i> Types of case studies	<i>Panel:</i> Facilitating a case discussion
12:00-1:00		Lunch	Lunch
1:00-1:50		<i>Lecture:</i> Case method and learning	<i>Walkthrough:</i> Case writing checklist, Part II
2:00-2:50		<i>Walkthrough:</i> Case writing checklist, Part I	<i>Panel:</i> Writing discussion cases for publication
3:00-3:50		<i>Discussion:</i> adapting discussion cases to cybersecurity topics	<i>Discussion:</i> Evaluating case method learning and incorporating cases in a cybersecurity program

Activity Descriptions:

Case discussion & debriefing. Participants will discuss actual case studies, following the protocol used for the ISM capstone course throughout the NSF TUES grant. Students will need a laptop computer or tablet to access the Internet.

Exercise: Types of Case Studies. Using an exercise first developed for the U.N. Staff College, participants will judge the appropriateness of a series of topics as the basis for possible discussion cases. Once results have been tallied, the facilitator will expand on the different types of cases using a question and answer format.

Lecture: Case method and learning. The pedagogical basis of the case method is explored with a particular focus on the types of complexity best suited for discussion cases. The challenge of assessing case method learning is introduced.

Walkthrough: Case writing checklist, Parts I & II. The steps of the case writing checklist (Appendix B of *Informing with the Case Method*) are discussed, including: finding case sites, choosing an appropriate topic, gathering information, involvement of the IRB in the process, acquiring case release and publication.

Discussion: Adapting discussion cases to cybersecurity topics. Central to the NSF SaTC grant has been the premise that discussion cases can prove an effective learning tool for cybersecurity education. The discussion with participants seeks to identify possible topics of interest in disciplines where the case method pedagogy is less common, particularly the sciences and mathematics.

Panel: Facilitating a case discussion. Members of the TUES grant team who have facilitated classroom discussions talk about their experiences with workshop participants.

Panel: Writing discussion cases for publication. Publication opportunities for discussion cases are presented and the *Journal of IT Education: Discussion Cases* template is discussed. Guests will include the publisher and managing editor of the journal.

Discussion: Evaluating case method learning and incorporating cases in a cybersecurity program. Participants are introduced to a variety of instruments that have been used to evaluate case method learning. The question of how case studies can be integrated into a cybersecurity master's or undergraduate program is discussed.

About the Lead Facilitator



Grandon Gill holds an AB (cum laude) from *Harvard College* and an MBA (high distinction) and DBA from *Harvard Business School*. He teaches introductory and intermediate courses in programming for undergraduates and also teaches case method capstone courses in the MIS undergraduate, MS-MIS and Executive MBA programs. He has also taught a variety of IT courses during his tenure at USF, from computer systems concepts to doctoral case methods. He received USF's Excellence in Undergraduate Teaching Award in 2007 and 2013.

Gill has published or edited more than 40 case studies, most recently for the *Journal of IT Education: Discussion Cases*. His recent book, *Informing with the Case Method*, has been the basis of workshops in the U.S. and around the globe. Thus far in 2013, venues have included the *NSF TUES PI Conference* in Washington D.C., *RMIT: Vietnam* in Ho Chi Minh City, the *United Nations Staff College* in Turin, Italy, and at the *3rd International Symposium on Integrating Research, Education, and Problem Solving (Special Track on Case Methodologies)*, Orlando Florida.

Gill is passionate about using technology as a teaching tool and has studied distance learning, strategy, and practice, alternative course designs, and tools for course development and delivery, all under the general heading of informing science. His research in this area has been published in many journals, including *Informing Science*, *Decision Sciences Journal of Innovative Education*, the *Journal of Information Systems Education*, *eLearn*, and the *Journal of IT Education*. He has also published multiple times in *MIS Quarterly*, the MIS discipline's leading journal—his most recent article considering the MIS fields from an informing science perspective. His academic service includes stints on the editorial boards of six journals. He is currently Editor-in-Chief of *Informing Science: the International Journal of the Emerging Transdiscipline* and the *Journal of IT Education: Discussion Cases*. He serves as a Governor and Fellow of the Informing Science Institute.