



## **Welcome to The Capture the Flag (CTF) Exercise Design Study!**

### **Congratulations!**

You have elected to participate in [The Capture the Flag \(CTF\) Exercise Design Study](#) by responding to an online survey via SurveyMonkey! This research is being conducted by [Kammi Kai Hefner](#), EDD as a partial requirement for completing a [Doctorate of Science in Cybersecurity](#) degree from [Capitol Technology University](#).

#### **Anonymity & Confidentiality**

Please [click here](#) to review Anonymity and Confidentiality information.

#### **What is a CTF Exercise (or Challenge)?**

A CTF Exercise is a "cyber" problem (i.e., exercise, scenario, task) presented to a Player usually during a CTF Competition.

#### **What is a Capture the Flag (CTF) Competition?**

A Capture the Flag (CTF) Competition is a type of cyber game where the Players (i.e., the competitors) search for flags (i.e., a specific piece of the word that may be hidden on a file, image, metadata, webpage or server) in a cyber environment via solving a CTF Exercise.

#### **Purpose(s) of this Study**

The objective of this study is to capture the informal teaching constructs CTF Exercise Designers use in developing CTF Exercises and to map these informal teaching constructs to the traditional theories of Instructional Design Strategies ("the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation" (Smith & Tillman, 2005)). Hence, one of the expected outcomes of this study is to document a CTF Exercise Teaching Paradigm (i.e., archetype, model, pattern, standard, theory).

This "new" Paradigm will allow teachers from other disciplines (e.g., STEM {disciplines in the life sciences, physical sciences, engineering, mathematics, computer science, and the health sciences}) to embrace the potential educational benefits of how CTF Exercises are designed.



This “new” Paradigm will also provide traditional educators insight into alternate methods of teaching cybersecurity skills to address the critical shortage of cybersecurity professionals sought by industry, government, and military entities.

### **Description of Procedures**

This study involves completing a Web-based questionnaire and will take approximately 5-10 minutes for seasoned CTF Exercise Designers to respond to 20 questions. Questions marked with an asterisk require an answer. You may [view the questionnaire](#) before making a final decision to participate.

### **Instructions**

Please read and respond to all questions. Click the Next button to navigate to the next question. Questions marked with an asterisk (\*) require an answer.

### **Terminology**

Please "google" any terms used throughout the survey for clarity or email [khefner@captechu.edu](mailto:khefner@captechu.edu) and/or [DrHefner@pobox.com](mailto:DrHefner@pobox.com) for clarification.

### **Age Eligibility**

You must be at least 18 years of age to participate.

### **Results of this Study**

Please contact the Principal Investigator at [DrHefner@pobox.com](mailto:DrHefner@pobox.com) after January 1, 2023 or visit [TheCTFExerciseStudy.guru](http://TheCTFExerciseStudy.guru) website to see a summary.