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Editor-in-Chief

IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

> *IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.*

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIPWorld Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is about information processing may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

More information about this series at http://www.springer.com/series/6102

Matt Bishop · Natalia Miloslavskaya
Marianthi Theocharidou (Eds.)

Information
Security Education
Across the Curriculum

9th IFIP WG 11.8 World Conference, WISE9
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Proceedings

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Preface

This volume contains the papers presented at the Ninth World Conference on Information Security Education (WISE9) held during May 26–28, 2015 in Hamburg, in conjunction with the IFIP International Information Security and Privacy Conference (IFIP SEC 2015). WISE9 is organized by the IFIP Working Group 11.8, which is an international group of people from academia, military, government and private organizations who volunteer their time and effort into increasing knowledge in the very broad field of information security education. WG11.8 has worked to increase Information Assurance Education and Awareness for almost two decades and this is the 9th conference of a successful series.

This year's conference received 20 submissions of high quality. Each submission was reviewed by at least 3, and on the average 3.3, Program Committee members. The committee decided to accept 11 full papers for publication. The acceptance rate of papers is 0.55. Two more invited papers from IFIP SEC 2015 were included in this volume due to their quality and high relevance to the WISE9 conference.

This conference took place due to the support and commitment of several individuals. First, we would like to thank all TC-11 members for giving us the opportunity to serve WISE9 and the working group. Our sincere appreciation goes to the members of the Program Committee, to the external reviewers, and to the authors, who trusted their intellectual work in our hands.

In particular, we would like to thank our colleague Prof. S.E. Goodman for proposing and chairing the panel on the theme of "Building National Cybersecurity Workforces," as well as our distinguished panel speakers for accepting our invitation and honoring the workshop with their presence and inspired discussions. We also thank the local organizers and hosts, first among them being the WISE9 Local and Logistics Chair Erik Moore. Last, but for sure not least, our appreciation goes to the WISE9 Conference Chair Lynn Futcher for her continuous and timely support.

Regarding the preparation of this volume, we would like to sincerely thank Erika Siebert-Cole and our publisher Springer for their assistance. Moreover, we would like to acknowledge the EasyChair conference management system, which was used both for managing the conference and creating this volume.

May 2015

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Organization

WISE9 is organized by the IFIP Working Group 11.8 – Information Security Education in conjunction with IFIP SEC 2015.

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Building National Cybersecurity Workforces

Panel Abstract

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Issues of national cybersecurity workforces have become increasingly important as cybersecurity becomes a critical issue. This panel will explore several issues about cybersecurity workforces, including:

– How do we come up with need-based estimates of the size and make-up of national cyber security workforces?
– How would such workforces be characterized?
– What would be the balance between professionalization, functional duties, and relation to employing organizations and national needs?
– How might the answers to these questions differ across a range of nations?
– What might a broad spectrum of educational institutions do to stimulate supply and demand?

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