

CARE: Cyber Awareness, Responsibility and Ethics <sup>TM</sup>  
(Second Revised Working Draft, June 13, 2002)

Overview

CARE is a classroom based educational program designed to help K-12 students know and understand the opportunities and responsibilities for the use of cyber technologies (computers and related information management tools). The program is based on the public safety component of the Hillsboro, Oregon's Vision 2020, a forward-looking plan developed by the community to focus and guide the complex and interrelated elements of growth in the municipality.

Program Management

It is appropriate to describe the organization of the CARE program as currently under construction. Program management is, however, centered in the Hillsboro Police Department and exists under the auspices and with the active support of Chief of Police Dan Louie and his senior management staff. As teaching and learning activities evolve, important program leadership and participation will be enlisted from the Hillsboro School District, business community, regional law enforcement agencies, local universities and the Police Reserve Specialist Program (PRS), among others.

Program Focus

Goal: The goal of the CARE program is to help students become responsible users of cyber technology (computers and related information management technologies).

General Objectives:

1. To help students understand how cyber technologies contribute to their lives and to the lives of their family, community, nation and society.
2. To help students understand their individual and corporate responsibility for maintaining the integrity and availability of cyber commerce.
3. To help students understand how cyber technologies have developed, and the prospects for future evolution.
4. To help students understand the scope of employment opportunities in cyber technologies (computer and related information technologies).
5. To help students understand the legal structure within which cyber technologies exist and operate.

6. To help students understand the ethical considerations associated with the use of cyber technologies, including the individual and social benefits of responsible use – and the individual and social harm that can be caused by irresponsible use.

### Program Content Organization

The CARE instructional taxonomy will initially be presented in a modified management-by-objectives (MBO) format as a conceptual framework. The completed conceptual framework will serve as a roadmap for developing the teaching-learning content for the pilot phase of the program, and subsequently serve as the baseline for determining the degree to which pilot objectives were achieved.

The conceptual framework will include a goal statement similar to the one presented above. The goal statement will be described as a set of general objectives. Each general objective will be described in behavioral terms as one or more specific objectives; and finally, action items (teaching learning activities) will be prepared for each specific objective.

CARE is intended to be an interactive and supplemental instructional program designed to support and enhance existing cyber (computer and information management) related teaching and learning classroom activities. Following the initial pilot and revision, a joint CARE and Hillsboro School District work group will cross-reference the successful supplemental cyber teaching-learning activities with components in the formal scope and sequence of the Hillsboro School District curriculum. This will help infuse CARE activities into the teaching-learning process, minimize classroom disruption, and help reinforce established district goals.

### Program Presentation

It is anticipated that specially prepared and technically qualified community professionals will present the CARE program. These persons will perform with school district approval and at the invitation and under the supervision of certified classroom teachers. It is possible, however, to imagine a time when CARE program activities will be formally adopted by Hillsboro and other participating school districts and presented by classroom teachers as an integral part of their program of studies.

### Audience

The initial target audience is by necessity limited to students of the Hillsboro, Oregon Public School District(s) (Hillsboro Uhs District 03J and Hillsboro 007). The Hillsboro Uhs District 03J has 5,956 enrolled students (95.37 public, 4.63 private); Hillsboro District 007 has 5,095 enrolled students (84.08 public, 15.92 private) (National Center for Educational Statistics, *School District Data Book*, General Characteristics Profile Summary, Undated).

Several factors contribute to the selection of the Hillsboro School District as the location for an initial pilot testing of the CARE program. Most important is the makeup and character of the community and its proximity to significant high technology industries. In addition, the community and schools are ethnically diverse, and the area is geographically proximate and

similar to other school districts in the Portland, Oregon metropolitan region. Further, the district has a history of teaching and instructional innovation, and is economically stable and well managed. As a consequence, the outcomes achieved in a Hillsboro School District pilot program might be expected to have similar results if the CARE program is eventually expanded to other communities and school districts.

A natural extension of a successful CARE pilot program will be to present it to other school districts in the metropolitan Portland area, and subsequently to the 198 local elementary and secondary school districts in the State of Oregon. Together, these local districts and State Department of Education managed schools enroll approximately 550,000 elementary and secondary students in grades K-12

([http://nces.ed.gov/pubs2000/stateprofiles/state\\_profiles/oregon.html](http://nces.ed.gov/pubs2000/stateprofiles/state_profiles/oregon.html): Oregon Department of Education, *Facts and Figures about Oregon Public Schools*, October 1999)

### Problem Addressed

It is in the nature of youth to explore their environment, test limits, challenge rules, resist constraints and push against authority. Since adults and the adult community impose many of the barriers to self-expression – a concept broadly described as “doing my own thing” – adult organizations, systems and structures represent a “target rich” challenge, one endowed with excitement, status and sometimes profit.

One test of this assumption is to ask adults over thirty to describe their adolescent pranks. Many anecdotes include attempts to challenge authority or “beat the system.” Admissions in one focus group ranged from the simple to complex, humorous to hurtful, harmless to damaging: Filling the teacher’s coffee room with water balloons, collecting and installing several hundred real estate signs on the football field, erecting a “worms” sign over the entrance to the cafeteria, putting soap in the municipal water fountain, and burning the school logo into a neighboring school’s lawn. Importantly, the stories which will be told by today’s taggers, hackers and gang members will be as different as those told by pranksters of the 1930s from those in the 1960s. While the opportunities for computer enabled self-expression and communication have expanded, so too have the dangers in the new millennium.

The scope of the matter is well summarized by Murphy (Peter Murphy, SVP, Vulnerability and Response Management, Bank of America, quoted in *Hacking Exposed: Network Security Secrets and Solutions*, Third Edition. New York: McGraw-Hill, 2001, pp. xvii-xix).

Whether we recognize it or not, when connected to the Internet in our home or office, we are all vulnerable. ...connecting to the Internet makes you a member (either willing or unwilling) of a community in which everyone becomes part of an enormous system—one much larger than any individual and where time and distances are almost eliminated. The interconnectivity of the Internet brings all participants in close proximity to each other. Your “neighbor next door” is now a hacker in a foreign country with intent to harm or a young talented kid searching out your vulnerabilities just for kicks.

Closing vulnerabilities that can be exploited before damage can occur has become a major test and challenge for government, business and individuals. Government is passing laws to establish parameters and penalties, businesses employ specialists to maintain organizational and cyber security, and home computer users install Norton Antivirals and other programs to prevent the takeover and destruction of their systems. But, as McClure cautions, (Stuart McClure and others, *Hacking Exposed, Network Security Secrets and Solutions*, *Ibid.* xxv) “In today’s esoteric and ever-changing underworld of computer security...the digital soldiers of today don’t possess even a vague security roadmap, much less a framework for combating these obscene and wily enemies.”

The economic cost imposed on society by cyber miscreants is enormous. Garfinkle (Simon Garfinkel, “Leaky Cyber Borders,” *Technology Review*, June 2002, p. 31) cites the Federal Trade Commission claim that “Americans are losing more than \$100 million a year to international con artists.” He says that while agents of the Department of Agriculture will stop someone from trying to bring fresh fruit from Europe into the United States, “there’s nothing to protect you from the electronic damage wrought by an infected Microsoft file sent to you by some computer hacker in Iraq,” or a bored college student in Arkansas.

It probably isn’t possible to establish how widespread the problem has become, or predict its future costs or dimensions. However, a sense of the concern can be gathered by reviewing titles which appearing over the past three months on cnn.com: Hacker forces bank to cancel VISA debit cards. New virus spreads using Adobe Acrobat files. Who’s reading your instant messages? The list is extensive and covers the universe of computer and related information technology areas.

### Timeline

The events of September 11, 2001 and following make CARE instruction imperative. Unfortunately, the CARE originators have found no other similar attempts to incorporate focused cyber awareness, responsibility and ethical instruction into programs of study. If such efforts are subsequently discovered, CARE will immediately seek to partner and share experiences and materials with those insightful individuals. In the meanwhile, the following timeline is proposed as a way of accelerating the development and implementation of the critical CARE teaching-learning tools.

#### May – June 2002: Program Scoping and Conceptual Development

Review literature (What is the problem scope? Is this already being done elsewhere?)  
Review characteristics of other supplemental curriculum programs (What works? What are the impediments and constraints? What are the keys to success?)  
Review Hillsboro School District curriculum scope and sequence (How is the program of studies organized? Where does cyber instruction occur at grade level and content areas?)  
Meet key constituent groups (Who are the key individuals and groups to CARE success? What do they want? What will they contribute?)

Prepare and distribute draft plan for review and comment to PRS (How does CARE fit together and accommodate the need for haste, address political reality, cope with lack of budget, create volunteer ownership and enthusiasm, et al?)  
Take care of politics!

#### June -- July, 2002: Develop Work Plan

Revise draft work plan per PRS input  
George Heuston present draft plan to Chief Louie, Commander Andy Schroder  
John Jones prepare draft conceptual framework for instructional materials  
Revise draft plan per Chief Louie, Commander Schroder  
Prepare power point program overview presentation and descriptive paper handout  
Select materials development work group – send conceptual framework  
Conduct materials development work group workshop and create teaching materials  
Present preliminary plan and draft instructional materials to Hillsboro School District (revise per District input)  
Select instructional team  
Conduct teaching methods and materials introduction workshop for instructional team  
Take care of politics!

#### July -- August 2002: Implement Materials Development & Select Human Resources

Select students and conduct trial run presentation of teaching-learning materials  
Revise materials based on student input  
Discuss pilot program presentations with Hillsboro School District personnel  
Identify and establish CARE presentation schedule with School District  
Refine teaching-learning materials  
Take care of politics!

#### September – November 2002: Conduct Pilot and Evaluate CARE Status

Conduct pilot presentations and evaluate the results  
Revise methods and materials as appropriate  
Consider possible CARE expansion  
Prepare and carry out an information program (industry, school districts, legislators, etc.)  
Take care of politics!

#### Budget

Ideally, the CARE program will be developed, tested and implemented without the need for any supplemental funding. However, it is unrealistic to assume that such an ambitious effort will incur no off-budget direct or indirect costs. Nevertheless, until additional planning reveals the magnitude and nature of available in kind and volunteer resources, the following assumptions will apply:

Conceptual Development: The initial development of the CARE program will be funded almost exclusively by Hillsboro Police Department, business and industry, and PRS as in kind and volunteer contributions.

Pilot: Classroom presentation of the CARE teaching-learning materials will, as before, depend largely on in kind and volunteer support. However, due to the involvement of curriculum specialists and classroom teachers in the pilot presentation and assessment, it is likely that some funding for educator stipends will be required. Similarly, the cost and source of such essential supports as training and materials production cannot yet be estimated.

Program Implementation: No realistic assessment of implementation costs can be projected at this early date. However, it is hoped that as the CARE program expands, it will retain the inherent cost effectiveness achieved in Hillsboro, Oregon through active volunteer support and participation.

### Summary

The evolution of cyber technology has introduced great opportunity and significant risk into our lives. Due to the rapid evolution of cyber technology and the absence of established rules and protocols, youth are confronted by complex and critical choices of ethics and responsibility for which they may be little prepared. The CARE program is designed to present the reality of those options and their consequences to public school students. By directly addressing these key issues, CARE sponsors hope to influence students in the direction of personal and socially acceptable use of cyber tools.

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