The Iowa Cyber Alliance is dedicated to the continual improvement in the cyber security posture of the citizens of Iowa and the engines of economic growth and development for the State and region. This shall be accomplished through a comprehensive set of literacy, training, outreach, and educational programs along with technical research initiatives. By leveraging current initiatives and capabilities across the State as well as identifying and closing gaps the Iowa Cyber Alliance is well positioned to make Iowa a leader in cyber security.

The goal of the Iowa Cyber Alliance is to create a safe and secure Iowa by delivering security literacy to all Iowans, providing educational pathways to grow the cyber workforce, and enhance the security capabilities to the benefit of the State, Region and Nation.

The Iowa Cyber Alliance will be the nation's first state wide comprehensive program dedicated to providing security education, outreach, and training to government agencies, businesses, and all citizens across a state as well as enhancing the cyber security workforce.

Membership in the Iowa Cyber Alliance will be open to any organization interested in the goals and mission of the alliance. The Iowa Cyber Alliance has grown out of a long standing partnership between numerous organizations and groups that have been providing input and to helping deliver the programming necessary to accomplish the goal of creating a safe and secure Iowa. The figure below shows the breadth of our current partners and the activities we conduct with each of them.

<table>
<thead>
<tr>
<th>Educational Partners</th>
<th>Industrial Partners</th>
<th>Other Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>High schools (&gt; 100)</td>
<td>National employers (&gt; 10)</td>
<td>State &amp; local government</td>
</tr>
<tr>
<td>Middle schools (&gt; 50)</td>
<td>Regional employers (&gt; 20)</td>
<td>Iowa National Guard</td>
</tr>
<tr>
<td>Community colleges (10)</td>
<td>Local employers (&gt; 10)</td>
<td>Trade groups</td>
</tr>
<tr>
<td>Area education agencies (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 year schools (4 outside Iowa)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Cyber security literacy
- Cyber defense competitions
- Workshops and teacher / instructor training
- Cyber security playground (ISERink)
- Training and pentesting for schools & government
- Cyber security education pathways.
- Provide scholarships, internships and employment
- Provide mentors for high / middle schools
- Provide support for cyber defense competitions
- Provide research opportunities
- Provide input into the cyber security educational programs
- Provide internships and employment
- Provide mentors for high / middle schools
- Provide support for cyber defense competitions
- Provide input into the cyber security educational programs
- Partner for statewide cyber security readiness training
4-E Model for creating a safe and secure Iowa

We need a multipronged approach in order to create a safe and secure Iowa and to address the cyber security issues of facing all Iowans. These issues include better user education, increased numbers of cyber security workers, robust training and cyber exercises, and enhanced partnerships between academia, industry, and government. Based on our long history and experience in working with our partners to advance cyber security efforts across Iowa we have developed a model based on four pillars that are needed to achieve the goals of the alliance (Enlighten, Engage, Educate, and Employ), as shown in the figure below.

![Iowa Cyber Alliance](image)

Four Pillars of the Iowa Cyber Alliance

An overview of each pillar, the goals of the pillar, and current activities are provided below. Iowa State University along with our partners have developed materials and methods for each pillar, however there are still gaps that need additional work. One of the primary outcomes of the Iowa Cyber Alliance will be to identify and fill any gaps within the 4-E model.

**Enlighten:** The goal of the enlighten pillar is to expose all citizens to the ideas behind cyber security. There are two primary thrusts behind this pillar, enlightening K-12 students and enlightening all citizens. Iowa State University has developed a robust set of security literacy curricular materials to teach students about security literacy ([www.security-literacy.org](http://www.security-literacy.org)). They have been providing materials so that all students can be made more literate and, therefore, be better able to protect themselves from cyber attacks. The literacy efforts currently underway span K-12 and even are used in post-secondary educational settings. We believe if this thrust of the pillar is correctly implemented we not only help students understand cyber security and the risks they take every day, but in addition we can get students to start thinking about pursuing cyber security as a career. By using the security literacy materials in the lower grades students are introduced to the idea that people work in this area, and as the students mature the workforce messaging becomes more focused.

Another aspect of the enlighten pillar is to provide security literacy to all citizens in Iowa. The Iowa Cyber Alliance will develop the nation's first state wide comprehensive program dedicated to providing security education to all citizens across a state. The Iowa Cyber Alliance will build off of these strengths to create learning materials that can be used to educate and train different audiences with different backgrounds. We will deliver the materials through various partner organizations like ISU.
Extension, 4H, SBDC, Iowa Law Enforcement, Iowa Area Educational Agencies, Office of the State CIO, Iowa National Guard, TAI, ICN, and Community Colleges.

The Iowa Cyber Alliance will work to:

- develop comprehensive security literacy program for all citizens
- deploy security literacy throughout Iowa schools
- partner with other state and national groups to develop best practices
- work with government and industry to identify or develop best practices for work place literacy

**Engage:** The engagement pillar is designed to provide opportunities for people (students, workers, citizens) to become involved in cyber security through training exercises, competitions, conferences, and training environments. One key aspect of this pillar is to provide opportunities for students that have shown some interest in IT and/or security to become involved with cyber security. These informal pathways will be based on the highly successful Hyperstream / IT-Olympics program developed between ISU and TAI. We currently provide materials for high school students to work with local mentors with the goal of learning cyber security and participating in a state-wide high school cyber defense competition. Last year we had over 130 high school students participating in the statewide cyber defense competition.

The Iowa Cyber Alliance will work to:

- expand the engagement opportunities for grades 6-12
- develop a state-wide mentorship program to enhance linkages between industry and students
- develop training for city, county and state government staff
- create state-wide cyber exercises for state and local government agencies
- create cyber education materials for small businesses and their employees
- develop cyber education materials for specific groups (like AG, BIO, etc)

**Educate:** Increasing the number of students who pursue a career in STEM has been a challenge across the country and there have been many efforts designed to address the issue. Iowa State University, in partnership with industry, K-12 schools, other institutions of higher learning, and government, has been working for over 15 years to increase the number of students entering IT and cyber security. This pillar has three important components to provide the educational opportunities necessary for students to enter the cyber workforce. The first is to develop pathways for students through the various educational partners in the alliance. For example, working on pathways for students who enter a community college to continue at a 4 year school in cyber security. The second element of this pillar is working with the alliance and our employers to continue to align our curriculums to their needs. This involves alignment with NICE framework. The third is to provide formal educational opportunities for students in grades 6-12. In addition employer interaction like internships, mentors, and speakers is critical to develop a highly skilled cyber workforce.

The Iowa Cyber Alliance will work to:

- develop articulation agreements between educational partners
- enhance the educational opportunities for the current workforce
- develop a set of uniform course outcomes to help employers
- develop scholarship and internship opportunities for students
- expand the cyber defense competitions
- expand cyber security education into 9-12 grades and into post high school
Employ: The final goal is to provide employment opportunities for the students. The alliance will work this regional employers and with various associations to help match students with employment opportunities. Currently employers recruit students through various career fairs held at each of the educational partners, which lead to duplication of effort.

The Iowa Cyber Alliance will work to:
- develop standardize job postings and job descriptions based on the NICE framework
- develop cyber security employment opportunities
- align educational outcomes with employment opportunities
- facilitate industrial interaction to meet workforce needs.

Structure of the Iowa Cyber Alliance:

The Iowa Cyber Alliance will be organized into three layers as described below:

- The Alliance members consisting of anyone belonging to the alliance
- The Alliance working groups consisting of representatives from the alliance membership
- The Alliance Leadership committee which will have a members from each working group.

Alliance members

Alliance membership is open to any group or individual interested in goals of the alliance. The ultimate goal of the alliance is to disseminate the information and materials to alliance members. We will hold an annual alliance meeting in the fall of each year with the goal of disseminating our information and materials. It should be noted that all of the materials we have produced in support of the alliance are available at no cost to the members, and that any new materials will also be released to the community.

Alliance Working Groups

There are four alliance working groups based on the four pillars. Membership to the working group is open to any alliance member. The working groups will meet on a regular basis to further the mission of the alliance and work toward the goals of the pillar. Each working group will have two co-chairs selected by the working group.

Alliance Leadership Committee

The Cyber Alliance Leadership committee will consist of the co-chairs from the pillars along with an executive team. The initial executive team consists of a representative from the Iowa National Guard, State of Iowa Office of the CIO, Iowa State University. The alliance leadership committee will be responsible for the overall function of the alliance, organizing the annual meeting, fund raising for support of the alliance, and dissemination of the information and materials. The Leadership committee will form an external advisory group consisting of national leaders. The advisory group will help provide guidance to the alliance.

For more information contact: Additional information:

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