Unmanned Systems Education Summit
March 14-15, 2016
Key Take Away Points

Findings:

There is robust need for workforce in the Unmanned Systems (UMS) domain. The needs span engineering, software, data analytics, cyber security, logistics, operators, maintenance, and more.

Industry workforce needs are not being fully met today.

There is a dearth of entry level jobs – what do industries want as entry level? It can be hard to place students into currently available jobs.

Multiple institutions are developing curricula for UAS operators, including mission specific skills such as emergency services. The curricula are currently being developed independently by various institutions (although with the aid of excellent subject matter experts). At this time there are no FAA standards for certification of UAS operators (no equivalent of a pilot certificate with a UAS rating) and no standards for airframe and powerplant (A&P) mechanic certification.

Currently there is a poor overall connection between academia and industry. There are notable exceptions such as the Liberty/Textron partnership. But overall there is room for significant improvement.

Industry, particularly small firms, needs multi-skilled, adaptable employees. Small businesses need people who are well educated and rounded and good workers; then they can be trained in terms of specific needs.

Certificate programs can be defined more freely and meet different needs more quickly and flexibly than degree programs.

There is an existing framework, 4-VA, that might be leveraged to begin the cooperation desired; 4-VA is a statewide initiative dedicated to fostering collaboration among Virginia universities with the goal of improving all Virginians' access to higher education. The 4-VA Collaborative advances initiatives to increase the number of college graduates, especially in fields important to the state's economic development. The Collaborative is charged with increasing access to science, technology, engineering, and math (STEM) courses for Virginia students. See: http://4-va.org/

Suggestions:

Jointly develop Virginia wide standards and curricula for UAS operators for commercial and emergency applications and for UAS maintenance technicians. This must be done in consultation with subject matter experts for application mission training (emergency services, GIS, vineyards, construction, etc.) and in collaboration with the FAA and appropriate standards bodies. Consider an FAA Pathfinder project. We are creating curricula based on rules of thumb at this point - general ideas, not based on specific regulations (because they don't exist yet).

As curricula develop, we should reverse map to military training so veterans can come into the field and be hired based on their actual skills/expertise.

We need a Virginia-wide marketing approach. One idea: publish a Virginia newsletter to describe what's going on in the education world in terms of UMS. An educational institution version of such a newsletter would contain news on programs, successes, upcoming events and would be useful both to keep the institutions aware but also aid in educating industry and investors. Get the news into the trade press.

Begin holding an annual UMS Education/Industry Day. Bring together industry and academia equally to connect and share needs/opportunities and adapt to the changing landscape. We need a flow of information from industry to academia. We need systematic efforts to understand industry needs and provide Virginia-wide efforts to meet needs. Develop a multi-institutional approach where institutions collectedly identify industry needs and establish standards for curriculum while allowing for niche strengths among education institutions. Develop a board between Community Colleges and four-year institutions and industry (provide feedback between material taught and hiring needs). We need a state-wide coalition of universities and Community Colleges.

Consider comprehensive models spanning K-12, higher education, internships, and industry/academia partnerships like the Liberty/Textron model.

Integrate cyber/big data/unmanned systems.

Create a virtual Research Triangle equivalent to UMS