EDUCATION AND PROFESSIONAL DEVELOPMENT IN THE GEOSPATIAL INFORMATION SCIENCE AND TECHNOLOGY COMMUNITY







By Christopher McGinty, AmericaView Program Manager, and Roberta Lenczowski, AmericaView Executive Director

AmericaView, Inc. (AV) confirms a natural affinity for advancing imaging and geospatial science through the educated use of remote sensing observations. Over the past two years, ASPRS and AV have submitted joint proposals on education innovation, citizen science outreach, and socio-economic benefits of remote sensing. AV members routinely present their applied research and community outreach outcomes at ASPRS national and regional conferences. ASPRS professionals often join the AV Fall Technical and Winter Business Meetings to share expertise. Not surprisingly, many members of the AV consortium are also ASPRS members, active in both national and regional technical programs.

America View Background

Established in 2003, AmericaView, Inc., a 501(c)(3) organization, serves as a nationally coordinated, universitybased, and state-implemented consortium advancing the use of remotely sensed data, education, technology, and research throughout the United States¹. The AV consortium originated at a time when satellite imagery was costly, and often difficult, to obtain. Many AV state members, known as StateViews (SVs), focused early funding awards on procurement of remotely sensed data and the development and management of independent data archives. These archives provided free or low-cost access to remotely sensed imagery and some derived information for academia, state and local governments, non-government organizations, and some companies. availability of the archives fostered educational and outreach programs that, in turn, encouraged the use of remotely sensed data and facilitated the transfer of related technology to the public and private sectors. In 2009, when Landsat data became freely accessible through the USGS, the emphasis on state or community archives of satellite imagery and data became less dominant although still highly valued in areas of less robust communication infrastructure or during crises response efforts. SVs have shifted attention to high impact activities (HIAs) that optimize community use of remotely sensed data for state and local needs through the AV program of education, outreach, applied research, and technology transfer.

The evolution of the AV program, and the trend of *PE&RS* articles, clearly reflect that the increase of freely available remotely sensed data has exposed an upwelling of needs and rapidly expanded the scientific study and practical use of Landsat and other remotely sensed observations and data.

The socio-economic benefits are invaluable. In 2012, based on a Booz-Allen study, the USGS assessed the economic value of Landsat data: "monitoring land use change, wildfire analysis and management, emergency/disaster management, monitoring coastal wetlands, climate change adaptation, and agricultural forecasting and management is estimated at \$1.7 billion/year.2" An additional value was estimated to be \$400 million/year in the international venue. This exponential growth in the dependency on Landsat data increased national interest in AV and the goals and mission of the consortium. In 2013, AV was the recipient of its second competitive fiveyear grant through the USGS Land Remote Sensing (LRS) Program, which enabled the AV consortium to expand to 39 active members by 2016. The USGS grant objective aligns with recognized needs and available technology "to promote the uses of space-based land remote sensing data and technologies through education and outreach at the state and local level and through university based and collaborative research projects. Technologies of interest include multispectral and hyperspectral electro-optical, thermal, and radar." SVs, within their local consortiums, realize the grant objectives through multiple educational and applied research roles. The SVs further demonstrate the unique value of AV: SVs adroitly interface between the local and state-level organizations' requirements for satellite imagery and federal agencies' design, deployment, and operation of systems for the collection of satellite imagery. AV has over a decade of experience in administering programs conducted by renowned academicians and researchers at major universities and their centers. With more than 350 associated professionals at the national and state level, AV has the ability to call upon a significant breadth of knowledge and skill to address challenges that may be met by remote sensing. The extensive network also ideally positions AV to address the USGS award interests: Nationwide Remote Sensing Data and Information Requirements; Remote Sensing Applications; Undergraduate and Graduate Research; Education and Training; Technology Transfer; and Outreach. Detailed information describing AV's impact in each of these interest areas can be gathered from the annually published fact sheets prepared by each SV. Two initiatives that can involve all PE&RS readers have similar acronyms, EOD and EODN, but quite different objectives.

Earth Observation Day (EOD) is a Science, Technology,

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¹ AmericaiView, Inc. www.americaview.org.

² Moderate Resolution Imagery in Improving Decision-Making, URL: http://bit.ly/2mQZsgg, Booz Allen Hamilton (last date accessed 1 March 2017).

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Engineering, and Mathematics (STEM) education and outreach event sponsored by AmericaView to celebrate the Landsat mission³. The annual October event is aligned with Earth Science Week activities, coordinated by the American Geosciences Institute (AGI). In 2016 over 800 individuals joined EOD events sponsored by 14 SVs. Any interested organization, group, club, or class is encouraged to join the educational fun!

WisconsinView, TexasView, MichiganView, and Indiana University have developed programs that directly access Landsat 8 imagery following initial USGS data processing steps. The imagery is delivered via the high-speed Earth Observation Depot Network (EODN) to researchers at the Space Science and Engineering Center (SSEC) at the University of Wisconsin-Madison who transform the imagery and data for systems and software used by weather scientists. Wisconsin's RealEarthTM system⁴ can immediately display and animate the imagery. If you follow weather maps, take a look at your own area.

CONCLUDING REMARKS

The academic leadership and advocacy role of AV and individual

- 3 AmericaView, Inc. Earth Observation Day (EOD), URL: http://bit. ly/2dwjHOr (last date accessed 1 March 2017).
- 4 University of Wisconsin-Madison Space Science and Engineering Center and the Cooperative Institute for Meteorological Satellite Studies, URL: http://bit.ly/2kQX5Mt (last date accessed 1 March 2017).

SVs for remote sensing understanding and exploitation and the persistent innovation by experienced educators and researchers characterize the continued influence of the AV consortium. Many AmericaView-affiliated professionals are also active ASPRS members. In its Value Proposition, ASPRS describes itself as "a thought leader" and "persistent innovator" and "advocate." AV members align well with those descriptors whether in education, disaster response support, water quality actions, citizen science advancement, or anywhere that remote sensing can have a profound effect. AV commitment nurtures work at local levels, transmits well-articulated needs to federal agencies and other providers, and renders the nationwide America View consortium a notable resource in the ever-expanding field of remote sensing. Both ASPRS and AV organizations synergistically benefit from the joint memberships and globally influence the application of Earth science to pressing environmental and socio-economic challenges. Both organizations will continue to support joint proposals for funded grants and welcome recommendations for such opportunities.

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