20th William T. Pecora Memorial Remote Sensing Symposium

Pecora 20 – "Observing a Changing Earth:
Science for Decisions…Monitoring, Assessment, and Projection"

November 13-16, 2017
Sioux Falls, South Dakota

Call for Abstracts

Overview
The Pecora Symposium series was established by the USGS and NASA in the 1970s as a forum to: 1) foster the exchange of scientific information and results derived from applications of Earth observing data to a broad range of land-based resources; and 2) discuss ideas, policies, and strategies concerning land remote sensing.

With emphasis on recent significant developments in remote sensing, the theme of Pecora 20 is "Observing a Changing Earth: Science for Decisions…Monitoring, Assessment, and Projection." This conference will offer a program on applications of satellite and other Earth observations to monitor, assess, and perform projections of future land and water resources, as well as big data and other analytical technologies to improve decision making utilizing satellite data.

Participation
We cordially invite land and water remote sensing data users, researchers, applications scientists, producers, managers, and policy-makers to participate in this important symposium by submitting an abstract for a paper or poster. Participants are encouraged to attend general and technical sessions, exhibits, and educational workshops on the very latest remote sensing research, modeling, applications, analysis techniques, and technologies. Pecora 20 provides an opportunity to make new friends and get reacquainted with old ones.

Organization
The Pecora 20 Symposium will be held Monday through Thursday, November 13 to 16, 2017 at the Denny T. Sanford Sioux Falls Convention Center in Sioux Falls, South Dakota. The program will be organized into five General Sessions with corresponding technical sessions, plus exhibits, and educational workshops. ASPRS is organizing the symposium on behalf of the USGS and NASA.

Categories and Topical Areas for Abstracts
In keeping with the symposium theme, the Pecora 20 Technical Program Committee seeks oral presentations and poster papers that highlight advances in transforming Earth observations into actionable information for monitoring and management of global land and water resources. Plenary and technical sessions are organized around the main symposium topics as follows:

- New initiatives for monitoring and projecting land and water cover, use, and change
- Challenges and innovations in Big Data analysis for solving complex largescale problems
- Applications of remote sensing for improving decision-making
- Emerging roles for SmallSats and airborne systems in operational monitoring
- Landsat and Sentinel-2: comparisons, cross-calibrations, and synergies

- Assimilation of Earth observations into land surface dynamic models, general circulation models, and other earth system models
- Advancing the use of remote sensing to understand our changing Earth

New initiatives for monitoring and projecting land and water cover, use, and change
Improving our understanding of land and water dynamics is essential for managing their impacts on human and natural systems. A number of new activities and initiatives are on track for producing more detailed, comprehensive, and up-to-date land and water information necessary to manage natural and human systems. This session invites papers and posters on current initiatives and activities including, but not limited to:

- Mapping, monitoring, and projecting land use and land cover change
- Time series analyses and multi-sensor data fusion into time series
- Monitoring ecosystem vegetation cover, health and disturbance
- Mapping global surface waters: quality and quantity
- Analyses of spatiotemporal changes in land and water use and associated impacts
- Evapotranspiration intercomparison studies at local to regional scales

Challenges and innovations in Big Data analysis for solving complex largescale problems
There has been significant progress in the most recent decades towards developing systems that provide scientists and operational users with easy and rapid access to big data. These systems allow for much greater stability and testing, manipulation and processing of Earth's long-term data record in order to answer the challenging questions of our times. This session may include focus on:

- Cloud computing and data storage
- Analysis ready data
- High level data products and remote sensing-based Climate Data Records/Essential Climate Variables
- Data analytic services (e.g., Google Earth Engine, Amazon), related data access services and analysis toolkits

Applications of remote sensing for improving decision-making
Remote sensing offers significant value for society by providing data and information to support decision-making at national, regional, and local levels. We invite papers and posters in this session from both users and providers of data for decision-making in application areas including:

- Agriculture and food security
- Water management and water security
- Forest health and management
- Wildfire
- Rangeland management
- Natural resources, conservation, invasive species, and biological diversity
- Coastal zones and wetlands
- Natural and manmade hazards and disasters
- Carbon cycle and accounting
- Health and disease

- Urban planning

Emerging roles for SmallSats and Airborne Systems in operational monitoring
Many applications require data with high spatial and temporal sampling for detailed or local analysis. We solicit contributions from users and providers of data from smallsats, cubesats, drones, and manned airborne systems, domestic and international. Focus in this session will include:

- Sensor requirements for different applications
- Technical issues (e.g., registration, calibration, data delivery)
- Success stories
- Synergies with existing national imaging programs

Landsat and Sentinel-2: comparisons, cross-calibrations, and synergies
Recent progress in moderate-resolution satellite operational programs including the successful launches of Landsat 8 and Sentinel-2A, the planned launch of Sentinel-2B, the development of Landsat 9, and ready access to the Landsat and Sentinel archives means that we now have opportunities to ingest these data together to improve research and operational applications. The use of multiple sensors with varying spatial, spectral, geometric, and temporal characteristics is challenging. The session will include contributions that advance and extend synergistic capabilities utilizing multiple satellite sensors with special focus on Landsat and Sentinel-2.

Assimilation of land surface observations into numerical weather prediction, general circulation, and other Earth-system models
The use of land surface observations within weather, climate, and Earth-system models has continued to increase in recent years. Models can be significantly improved by incorporation of higher resolution data, as well as novel data sources. This session will review the current status and recent advances in the assimilation of land observations within these models and the future challenges to continued improvement in model results.

Advancing the use of remote sensing to understand our changing Earth
The Pecora Symposium was originally established to provide a forum where users of remotely sensed land data could exchange scientific and practical results of their studies. Pecora 20 honors that tradition by also inviting papers and posters that address a broad spectrum of interesting and innovative scientific studies that contribute to understanding and managing environmental change. These include, but are not limited to:

Environmental Monitoring and Change

- Land Use and Land Cover Change
- Climate Variability and Change
- Understanding Biogeochemical Cycles
- Trends in Ecosystems Services
- Sea Ice, Glaciation, and Snow Pack Assessment
- Erosion Control and Hydrological Assessment
- Deforestation, Desertification, and Salinization
- Expanding Human Activity and Urbanization
- Invasive Species

Natural Resource Management

- Agriculture, Forestry, and Sustainable Development
- Water Resource Assessment and Management
- Energy Resource/Mineral Wealth Assessment & Management
- Conservation Planning

- Habitat and Biodiversity Protection

Civil Operations and Applications
- Land Use Planning and Management
- Resource Conservation and Management
- Wildfire, Coastal Zone, and Flood Plain Assessment
- Human Health and Well-Being
- Physical Infrastructure Assessment and Operation
- Navigation and Transportation Planning and Management
- Property Valuation and Assessment
- Water and Air Quality
- Natural Disasters Mitigation and Response

National Security
- Intelligence and Information Gathering
- Homeland Security
- U.S. Military Operations

International Cooperation
- Boundary Control
- International Conventions and Treaty Management
- Disasters and the International Charter
- GEO and CEOS Initiatives

Submission of Abstracts
Abstracts should be submitted electronically using the form available at the symposium website, www.asprs.org/Pecora20. Authors will be asked to select a category for their paper according to the categories and topic areas listed on the website, and they will be asked to state a preference for oral or poster presentation. Abstracts may not exceed 300 words in length. Abstracts also should include 3-5 keys words and contact information for the senior author and the presenter.

If electronic submission using the website is not possible, abstracts and required information may be mailed to the Pecora 20 Technical Committee Co-Chair, Ms. Jesslyn Brown, U.S. Geological Survey, EROS Center, Sioux Falls, SD 57198 or emailed to jfbrown@usgs.gov.

Please Include:

- Topic or category from website list
- Preference for presentation type
- Paper Title
- Abstract not to exceed 300 words in length
- 3 to 5 key words
- Author(s) name(s) and Affiliation(s)
- Proposed presenter(s) names and contact information
- Author contact information, including mailing address, phone, and e-mail

Selection Criteria

All abstracts will be evaluated and selections will be based on overall quality of the abstract and its responsiveness to the symposium theme. **Abstracts are due July 1, 2017, and strict adherence to submission deadlines is requested**. Upon notification of acceptance, authors will be expected to sign and return the acceptance letter verifying their intent to attend and make a presentation at the symposium.

Papers accepted for oral presentation will be assigned to a concurrent session based on topic. Authors sharing common interests are encouraged to coordinate submission of papers that could form a session on a specific topic. Concurrent sessions will be 90 minutes in duration, consisting of four or five oral presentations, each of which will be 15-20 minutes in length. Authors who have not received a communication regarding their submission by August 1, 2017, should contact the Pecora 20 Technical Committee Co-Chairs listed in this announcement.

Pecora 20 Co-Chairs: Jesslyn Brown, USGS jfbrown@usgs.gov
Martha Anderson, USDA Martha.Anderson@ars.usda.gov

Inclusion of Presentation in Proceedings

If a presenter wishes to have their work included in the proceedings, a full presentation must be submitted electronically no later than October 13, 2017. Complete details will be included in the Notification of Acceptance e-mail. Proceedings submissions are not required to make an oral or poster presentation at the symposium.

Symposium Registration and Deadlines

Speakers must complete a speaker registration form, audio video form, and include the appropriate speaker registration fee no later than **September 15, 2017** to receive the discounted speaker rate. Speakers who intend to submit a paper for the final Symposium Proceedings must do so by **October 13, 2017**.

Presenters who do not register within the above noted time limit will be dropped from the program and all listings will be removed from the Preliminary Program and Symposium Proceedings.

Important Dates
Abstracts Due – July 1, 2017

Notice of Acceptance – August 1, 2017

Speaker Registration Date: September 15, 2017

Paper Deadline (for inclusion in Proceedings) – October 13, 2017

See the ASPRS web site for more information: www.asprs.org/Pecora20