

Newsletter of the Subcommittee on Hydrology

available on-line at: <http://acwi.gov/hydrology/index.html>

Fall 2012

Inside this issue:

[Welcome from the Chair](#) 1

[ACWI Purpose](#) 2

[About the Subcommittee On Hydrology](#) 2

[Highlights from the October 2012 Meeting](#) 2

[Work Group Contacts and ACWI Subcommittees](#) 3

[Items of Interest](#) 4-5

[Meetings of Interest](#) 6-7

[ACWI Subcommittee on Hydrology Meeting](#) 8

[Reminders and Final Notes](#) 9

Welcome from the Chair

Season's Greeting!

ACWI SOH had a fantastic year of information exchanges and workgroup progress. The SOH administration thanks all who contributed to our cause, participated in the exchanges, and helped to transfer the information within your organization. By moving to different meeting locations, the SOH had hoped to confer more hydrologic information to other interested staff members of the hosting agency. Thanks to EPA, USDA, and FERC for hosting the ACWI-SOH 2012 meetings.

Beginning early in 2012, the SOH also initiated an alignment of the respective member agency's needs with ACWI priorities. The SOH re-examined the activities of the SOH work-groups, recommended that any outstanding actions be brought to closure, advised the workgroups to refocus on the high priorities for SOH, and started a cross-alignment of SOH efforts with other ACWI Subcommittees. Since the workgroup activities were of interest to other subcommittees, the SOH encouraged the development of workgroup status reports, subsequent presentations of these reports to the SOH members, and shared these with other subcommittees. These reports precipitated productive discussions and fostered further exchange of information within ACWI member or-

ganizations.

An excellent example of this exchange resulted in the Extreme Storms Workgroup's identification of the need for a gathering of expertise to facilitate information sharing to bridge the current state-of-knowledge between extreme flood assessments and risk assessments for critical infrastructures. Through the diligent efforts from Thomas Nicholson, a public meeting will be held at the NRC January 29-31, 2013 among experts in this arena to present state-of-the-science information on flood assessments. Combination of flood perils, in association with dam safety, probable maximum floods, probable maximum precipitation, hurricane storm surge, and tsunamis, will be discussed to generate ideas and insights on potential methods to develop a probabilistic flood hazard assessment (PFHA) for use in probabilistic risk assessments (PRA).

The SOH is also encouraged by the continued progress being made by the Hydrologic Frequency Analysis Workgroup (HFAWG). We appreciate the years of HFAWG research, testing, and software development, as HFAWG is nearly ready to deliver new beta software with new recommended techniques. Special thanks to USGS, USBR, USACE, and Cornell University for working with HFAWG in enhanc-

ing the procedures and updating the software. ACWI-SOH is looking forward to the HFAWG recommendations, their test results, the USGS enhancements to Peak-FQ, and demonstration of these new techniques in the Peak-FQ Beta release. The ACWI-SOH membership hopes to be in the position to evaluate the new software, provide guidance on any necessary changes, and approve the new procedures in the beta software in 2013.

We would like to recognize our guests, Subcommittee members, and workgroup teams for generously donating your time, sharing your expertise, providing valuable feedback, completing assigned actions in a timely fashion, distributing water-related information, and making presentations in 2012. Much more space would be warranted to recognize all of the individual efforts. In closing, thanks to all for contributing in making 2012 an outstanding year for SOH. We wish you the best for 2013!

Best Regards,

*Richard Raione, Chair
U.S. NRC*

*Victor Hom, Vice-Chair
NWS*

*Joseph Giacinto, Editor
U.S. NRC*



About the Subcommittee on Hydrology

The purpose of the Subcommittee on Hydrology is "To improve the availability and reliability of surface-water quantity information needed for hazard mitigation, water supply and demand management, and environmental protection." All members who join the SOH share in and support this common purpose as a network to fulfill our mission as defined in the Terms of Reference.

The subcommittee Chair and current contact is Richard Raione of the U.S. Nuclear Regulatory Commission. Richard can be reached at (301) 415-7190 or at: Richard.Raione@nrc.gov

Detailed information about the subcommittee can be found at: <http://acwi.gov/hydrology/>

The Subcommittee on Hydrology reports to the Advisory Committee on Water Information that operates under the Federal Advisory Committee Act.

ACWI Purpose

The purpose of the Advisory Committee on Water Information (ACWI) is to improve water information for decision making about natural resources management and environmental protection. The Office of Management and Budget (OMB) Memorandum No. 92-01 designates the Department of the Interior, through the U.S. Geological Survey (USGS), as the lead agency. Other Federal organizations that fund, collect, or use water resources information work together with the USGS to implement program recommendations.

Highlights from October 2012 Meeting

The October 15, 2012 meeting began with introductions and a review of the July 2012 meeting. This was immediately followed by two excellent presentations. The first was the "Army Water Boot Print" presented by Francis Reilly, and the second "Challenges in Determining the Probable Maximum Precipitation" by Dr. Ed Tomlinson. Both presentations led to worthwhile and interesting discussions related to ACWI-SOH purpose and our membership concerns for the extreme spectrum of hydrology, namely "too little", "too much", and "water in the wrong places".

As discussed at the meeting, continued progress is being made by all SOH workgroups including the Hydrologic and Hydraulic GIS Applications Work Group chaired by William Merkel, the Extreme Storms Work Group chaired by Tom Nicholson, the Hydrologic Frequency Analysis Work Group chaired by Will Thomas, and the Hydrologic Modeling Work Group chaired by Jerry Webb. Dr. Chandra Pathak presented a status of the Joint Federal Interagency Conference (SEDHYM) being planned for March 2014. Will Thomas summarized the recent HFAWG meeting and reviewed the recommendations from Dr. Stedinger and Mr. LaMontagne on the detection of Potential Influential Low Flows in the Multiple-Grubbs Beck test and impacts the Type 1 error rates. On behalf of the Satellite Telemetry Interagency Workgroup, Jerry Webb mentioned the need for contributions to help sustain DOMSAT.

Next ACWI SOH Subcommittee Meeting—January 28, 2013

The next ACWI-SOH meeting will be held on Monday, January 28 from noon to 3:00 p.m. at the USACE Headquarter, in Washington, DC. The USACE Headquarter is located at 441 G Street, NW two blocks north of the Judiciary Square Metro Station. Dr. Chandra Pathak will be our guest speaker and present "The 2011 Mississippi River Basin Flood: A Perspective on Forecasting, Water Management, and Flood Fight". Dr. Pathak's presentation will provide information on the design of Mississippi River & Tributaries Project systems and the system performance during the 2011 flood event. This multi-purpose system is important to navigation and for flood control protection of the millions of river basin residents.

January is shaping up to be a busy month and we hope to see all of you at the upcoming meetings in the new year.

ACWI Subcommittees

- ◆ [Monitoring](#)
- ◆ [Methods](#)
- ◆ [NAWQA Liaison](#)
- ◆ [Ground Water](#)
- ◆ [Hydrology \(SOH\)](#)
- ◆ [Sedimentation](#)
- ◆ [Spatial Water Data](#)
- ◆ [Sustainable Water](#)
- ◆ [Climate Change](#)



SOH Work Group Contacts

[Extreme Storm Events Work Group](#)

<http://acwi.gov/hydrology/extreme-storm/index.html>

Information on the activities of the Extreme Storm Events Work Group can be obtained from [Tom Nicholson](#) (301-251-7498).

[Hydrologic Frequency Analysis Work Group](#)

<http://acwi.gov/hydrology/Frequency/index.html>

Information on the activities of the Work Group can be obtained from [Will Thomas](#).

[Satellite Telemetry Interagency Work Group](#)

<http://acwi.gov/hydrology/stiwg/index.html>

Meeting minutes and information on the activities of this Work Group can be obtained from [Richard T. Engstrom](#) (309-794-5408), [Bonnie Wyatt](#) (202-205-1202) or [Linnea Keating](#), (208-475-8312).

[Hydrologic and Hydraulic GIS Applications Work Group](#)

<http://acwi.gov/hydrology/h2gisa/>

For information on the Work Group or to become a member please contact [Bill Merkel](#) by phone at 301-504-3956.

[Hydrologic Modeling Work Group](#)

<http://acwi.gov/hydrology/Hydro-Modeling/index.html>

For information on the Work Group or to become a member please contact [Jerry Webb](#) by phone at 202-761-0673.

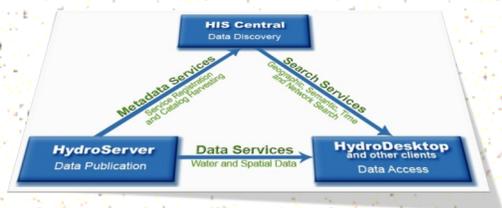
[Water Resources Adaptation to Climate Change Workgroup](#)

http://acwi.gov/climate_wkq/index.html

For more information contact the Federal Co-Chair, [Jeff Peterson](#), U.S. Environmental Protection by phone at 202-564-3745, or Non-Federal Co-Chair, [Paul Freedman](#), LimnoTech, at 734-332-1200.

Items of Interest

The CUAHSI Hydrologic Information System Moving to WaterML 2.0



The CUAHSI Hydrologic Information System (HIS) (<http://his.cuahsi.org/>) is maintaining a central service registry and metadata catalog to enable hydrologic data discovery across different data sources. Currently, the catalog includes 93 services, which are compatible with WaterML 1.x and provide access to hydrologic measurement at 2.79 million locations with 32,400 variables organized into 33.9 million time series. For a better understanding of CUASHI HIS, see the following workshop presentations, demonstrations, and exercises: Introduction to the CUAHSI Hydrologic Information System Short Course, presented at the [2011 EWRI World Environmental and Water Resources Congress](#).

The development of WaterML into an international standard is currently managed by the Hydrology Domain Working Group (HDWG) of the World Meteorological Organization and the Open Geospatial Consortium (OGC). For several years, the USGS, partnered with agencies from Canada, Germany, France and Australia, and experts from a number of commercial companies have been involved in the development and experimentation of a new enhanced specification for WaterML. This new specification, WaterML 2.0, becomes the first ever formally adopted international water data exchange standard (<http://www.opengeospatial.org/pressroom/pressrelease/1696>). It will be officially presented at the next WMO Commission for Hydrology meeting in November 2012 at Geneva.

The CUAHSI HIS team, who is closely involved in this work, would like to recognize the leadership of Dr. Zaslavsky, co-Chair of the HDWG, and Dr. Valentine, co-chair of the WaterML 2.0 standards working group. In addition, leadership of the CUAHSI HIS effort is transitioning from David Maidment (U. Texas) to David Tarboton (Utah St.), so our appreciation also goes out to Dr. Maidment for his years of service.

Submitted by [Ilya Zaslavsky](#), San Diego Supercomputing Center, [David Goodrich](#), USDA-ARS, and [Victor Hom](#), NWS Office of Climate Water Weather Services.

Bill Merkel Receives USDA Secretary's Honor Award



Agriculture Secretary Tom Vilsack and Deputy Agriculture Secretary Kathleen Merrigan with William Merkel, Natural Resource Conservation Service (NRCS) during the Honor Award group photography on the patio of the U.S. Department of Agriculture in Washington, D.C. on Wednesday, Sept. 12, 2012. USDA photo by Bob Nichols.

William "Bill" Merkel, Beltsville, Maryland, was recently presented with a Department of Agriculture (USDA) Secretary's Honor Award. This award is the most prestigious award given at USDA in order to recognize employees who have made outstanding contributions supporting USDA's mission. Bill's award, in the category of *Personal and Professional Excellence*, was given for his work at as the NRCS expert and technical lead for the WinTR-20 computer software. WinTR-20 and its predecessor, TR-20, Computer Program for Project Formulation, were developed for evaluating the hydrology of Watershed and Flood Prevention Act projects.

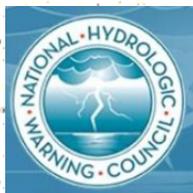
Bill's contributions include incorporating current technology to enhance the applicability and usability of WinTR-20 and developing the [NRCS GeoHydro ArcGIS extension](#) allowing users to import geographical information system (GIS) data into WinTR-20. Scientists and engineers worldwide use WinTR-20 for hydrologic evaluations critical to land use management planning and assessing effectiveness of storm water runoff and flood control measures. Prior to the development of TR-20 and WinTR-20, these analyses could take months of intensive work. Now, they are done in hours. Because of his hard work and dedication, WinTR-20 is recognized as one of the most important watershed planning tools that USDA provides for scientists, engineers, and conservationists. Congratulations, Bill!

Submitted by [Claudia Hoeft](#), USDA-NRCS.

[Back to Table of Contents](#)

Items of Interest

Inside the Beltway NWHC Perspectives



(Reprinted from the NWHC Transmission, "Inside the Beltway", November 2012 by Benjamin A. Pratt, PE, CFM)

I want to report that the Advisory Committee on Water Information Subcommittee on Hydrology (ACWI/SOH) met October 15, 2012 at the United States Department of Agriculture Building in Washington, DC. This was my first face-to-face meeting with the ACWI/SOH since my installment as NWHC DC Liaison and was warmly welcomed! The ACWI/SOH meets quarterly for the primary reason to gather and exchange information from each of the ACWI/SOH's workgroups. This particular meeting also included two very interesting presentations.

The first presentation titled "Army Water Footprint Study" presented the methodology and preliminary findings of a recent study to quantify the amount and location of water used by the United States Army. Multiple objectives were detailed for the study, which included identifying supply chain liability to water shortage as well as cost saving opportunities with more efficient water use. The second presentation titled "Challenges in Determining Probable Maximum Precipitation (PMP)" outlined a number of challenges to determining PMP, which include lack of current data of sufficient resolution, and presented proprietary software from Applied Weather Associates and METSTAT, Inc. titled "Storm Precipitation Analysis System (SPAS)" used to develop depth-area-duration analyses for site-specific PMPs. Both presentations were well received and stimulated good conversation among the Subcommittee members.

Finally of note, the Hydrologic Frequency Analysis Workgroup (HFAWG) continues to work on the update to Bulletin 17B with no further word as to when we can expect Bulletin 17C to hit the streets. I have volunteered to participate as a member of the HFAWG and expect to be able to provide you more detail in coming

editions of this column.

*Submitted by [Benjamin A. Pratt, PE, CFM](#)
National Hydrologic Warning Council (NWHC).*

News from the HFAWG

In September 2012, Mr. Will Thomas coordinated and led the Hydrologic Frequency Analysis Work Group's (HFAWG) half day meeting at Baker's office in Alexandria, VA. Some highlights and accomplishments of this meeting included:

- ◆ Andrea Veilleux, USGS, presented a PowerPoint presentation on the USGS PeakFQ program (beta Version 7.0) that includes the EMA/MGB procedures. Andrea identified the input data required for EMA and discussed the analysis results. This was informative with respect to describing interval data and perception thresholds.
- ◆ Nancy Barth, USGS, then demonstrated the PeakFQ with two examples that had historic data and low peaks. This further illustrated the decisions that are needed in an EMA/MGB analysis. The USGS is close to releasing the program to HFAWG members for your individual testing.
- ◆ Jerry Stedinger and Jonathan Lamontagne, Cornell University, described some of the testing they recently completed on applying slightly different alternatives (different levels of significance) of the MGB test. We agreed that one of the alternatives was slightly better than what was used in the March 2012 testing report.
- ◆ Using the new alternative to the MGB test, the testing group will rerun the Monte Carlo simulations and the 82-station sample that are described in the March 2012 testing report. The objective is to revise the March 2012 testing report

ACWI-SOH is looking forward to continued progress and assistance in enhancing current flood frequency procedures.

Submitted by [Victor Hom](#), NWS Office of Climate Water Weather Services.

[Back to Table of Contents](#)

Meetings of Interest

Workshop on Probabilistic Flood Hazard Assessment (PFHA)

January 29 - 31, 2013, 8:30 a.m. – 6:00 p.m.
U.S. NRC Headquarters Auditorium
11555 Rockville Pike, Rockville, MD 20852

The U.S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research (RES), Nuclear Reactor Regulation (NRR), and New Reactors (NRO), in cooperation with sponsoring Federal agencies: U.S. Department of Energy (DOE); Federal Energy Regulatory Commission (FERC); U.S. Army Corps of Engineers (USACE); U.S. Bureau of Reclamation (BoR); and U.S. Geological Survey (USGS) have developed the upcoming “Workshop on Probabilistic Flood Hazard Assessment (PFHA).”

The workshop is open to the public with opportunities for public comments and questions before the close of each workshop day.

The aim of the workshop is to establish the state-of-the-practice for extreme flood assessments within a risk context with the following objectives:

- ◆ Facilitate the sharing of information between both Federal agencies and other interested parties to bridge the current state-of-knowledge between extreme flood assessments and risk assessments of critical infrastructures.
- ◆ Seek ideas and insights on possible ways to develop a probabilistic flood hazard assessment (PFHA) for use in probabilistic risk assessments (PRA). Flood assessments include combinations of flood-causing mechanisms associated with riverine flooding, dam and levee safety, extreme storm precipitation, hurricane and storm surges, and tsunamis.
- ◆ Identify potential components of flood-causing mechanisms that lend itself to probabilistic analysis and warrant further study (i.e., computer-generated storm events).
- ◆ Establish realistic plans for PFHA coordination of research studies as the follow-up to the workshop observations and insights.

- ◆ Develop plans for a cooperative research strategy on PFHA for the workshop sponsors.

Focus

The workshop will focus on the following activities:

- ◆ Discuss the applicability and practicality of using probabilistic approaches for extreme flood hazard assessments within a risk framework.
- ◆ Identify steps needed to advance the potential use of PFHA for extreme flood assessments within PRA.
- ◆ Determine how these potential approaches can be calibrated with more traditional deterministic methods.
- ◆ Leverage the flood hazard risk assessment studies performed by others including Federal and nongovernment sources to understand the flood assessment needs of the sponsoring Federal agencies with respect to the evaluation of critical industry infrastructure.

The workshop proceedings will be documented as a NUREG/CP (conference proceeding) report. The NUREG/CP will document the extended abstracts and/or technical papers by the presenters including references and URLs, panel discussion summaries, and principal observations and insights for future cooperation on PFHA strategies and methods.

Workshop contacts:

Thomas Nicholson, Co-Chair

U.S. NRC (RES)

Thomas.Nicholson@nrc.gov

Wendy Reed, Coordinator

U.S. NRC (RES)

Wendy.Reed@nrc.gov

Submitted by [Joseph Giacinto](#), U.S. NRC

Meetings of Interest

This is not an exhaustive list, but includes meetings of interest to the water resources community that have been brought to our attention. These meetings may be, but are not necessarily, co-sponsored by ACWI or Council members:

January 6-10, 2013	AMS Annual Meeting —93rd American Meteorological Society Annual Meeting
January 29-31, 2013	Workshop on Probabilistic Flood Hazard Assessment (PFHA), U.S. NRC Headquarters Auditorium Rockville, MD.
March 25-27, 2013	2013 American Water Resources Association (AWRA) Spring Specialty Conference —Agricultural Hydrology and Water Quality II
April 14-19, 2013	AGU- Coastal Processes and Environments Under Sea-Level Rise and Changing Climate: Science to Inform Management
April 21-26, 2013	8th Annual IAHS International Groundwater Quality Conference -Managing Groundwater Quality to Support Competing Human and Ecological Needs
April 28-May 2, 2013	2013 NGWA Summit — The National and International Conference on Groundwater San Antonio, Texas
May 13—16, 2013	HydroEco2013 — International Multidisciplinary Conference on Hydrology and Ecology: Emerging Patterns, Breakthroughs and Challenges
May 19-23, 2013	World Environmental & Water Resources Congress 2013 -Sponsored by American Society of Civil Engineers (ASCE) Cincinnati, OH, USA
Jun 3-6, 2013	The 10th National Hydrologic Warning Council (NHWC) Biennial Training Conference and Exposition . Sawgrass Marriott, Ponte Vedra, FL. The theme for the Biennial Training Conference and Exposition is "First Coast, Lasting Partnerships".
Jun 9-14, 2013	ASFPM's 37th Annual National Conference, "Remembering the Past - Insuring the Future" , Connecticut Convention Center, Hartford, CT.
Jun. 17-21, 2013	19th Conference on Atmospheric and Oceanic Fluid Dynamics -Sponsored by the American Meteorological Society, Newport, RI, USA



ACWI Subcommittee on Hydrology Meeting

Place:

Headquarters, U.S. Army Corps of Engineers
 Room 3K86 (3rd floor conference room)
 441 G Street NW
 Washington, DC 20314-1000

Contact: Dr. Chandra Pathak, (202) 761-4668. Dr. Pathak will be at the G Street entrance to escort attendees between 11:45 and 11:55 am.

Time and Date:

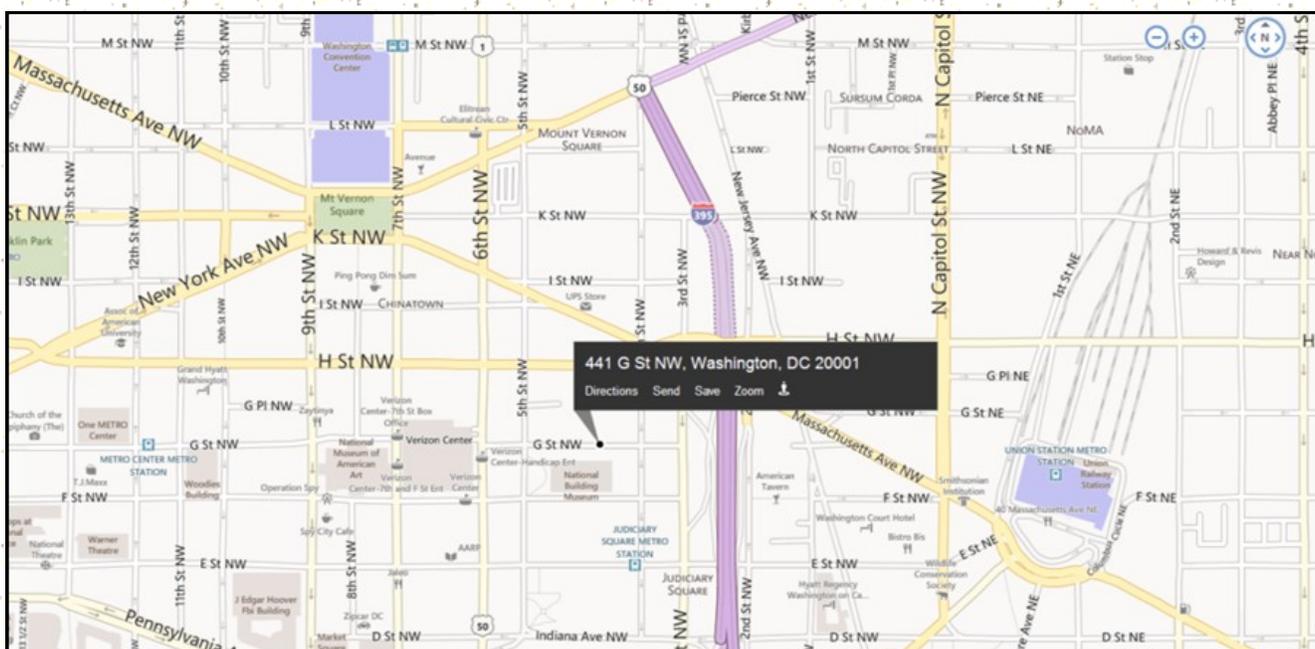
Noon —3:00 p.m., January 28, 2013 (arrive 15 minutes early **with photo ID** for security check and escort).

Featured Speaker: Dr. Chandra Pathak will be presenting “The 2011 Mississippi River Basin Flood: A Perspective on Forecasting, Water Management, and Flood Fight”. Dr. Pathak’s presentation will provide information on the design of Mississippi River & Tributaries Project systems and the system performance during the 2011 flood event. This multi-purpose system is important for navigation and for flood control protection of millions of river basin residents.

Metro Directions:

Red Line to Judiciary Square Metro Station: The USACE offices are two blocks north of the Metro stop.

Yellow/Green Line to Gallery Place-Chinatown Metro Station: Take 7th Street and H Street (Chinatown) exit out of the station. After exiting, take right on to H Street and walk two blocks to 5th Street intersection. Take a right and walk along 5th Street for one block. Then take a left on G Street at the intersection. The building is on the left.



Final Notes



ACWI Subcommittee on Hydrology Working Group Presentations

⇒ Please send slide presentations for future meetings to [Richard Raione](#) and [Victor Hom](#).

Suggested input for Workgroup status report slide presentations includes the following:

- Brief purpose, goals, objectives and history of the working group
- Status over the previous one to two years, accomplishments, milestones
- Predicted status and work to be done in the upcoming year
- Identify areas where ACWI can provide guidance, input and problem solving. Include any desired funding needs and associated rationale / justification.

Any optional additional narratives regarding working group status may be provided prior to the ACWI meeting for in-depth insights.

To submit items for upcoming newsletters, please contact:

[Richard Raione](#), Chair

(301) 415 7190

[Victor Hom](#), Vice Chair

301-713-0006 x173



[Joseph Giacinto](#), Editor

[Back to Table of Contents](#)