



AIH is here to serve the profession and the members

- AIH is the only organization that certifies professionals in the fields of surface water and groundwater hydrology, and water quality both nationally and internationally.
- AIH provides educational training venues to the professionals in the field of hydrologic sciences.
- AIH speaks to lawmakers on behalf of you and the profession as an advocacy

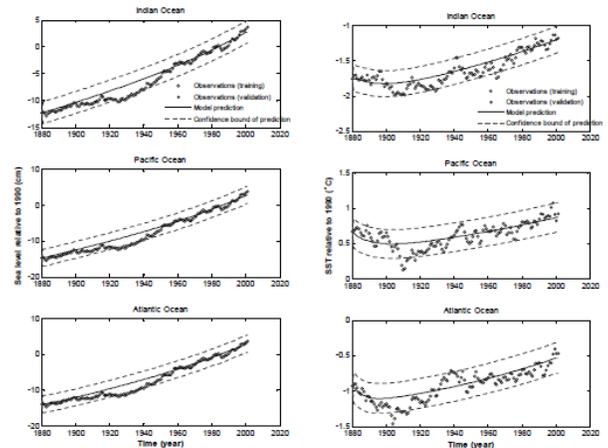


Inside This Issue

Climate Change & SLR	1
President's Message	2
From the Executive Directors Desk	3
Reservoir Storage Reduction	5
New Members	8
Oregon WRD	8
Mexican Section	9
AIH Excerpts	9
AGI Review	11
Congratulations	12

Climate Change, Sea Level Rise and Spatial Variability

Sea Level Rise (SLR) is estimated to be one of the most damaging impacts of climate change for coastal regions of the world (IPCC, 2013). Thus, the effect of climate change on future sea levels and the prediction of this phenomena has drawn a lot of attention in the recent literature. An important aspect of SLR is its spatial variability. According to IPCC studies (IPCC, 2013), future sea level rise in world's oceans will not be the same. Information on spatial distribution of SLR is necessary to identify potential threats at various regions of the world. Despite various studies on identification of the geographical pattern of SLR, this analysis is still in its infancy. More recent approaches to solve this problem include the characterization of the relationship between SLR and Sea Surface Temperatures (SST) using a dynamic system model. In this approach spatial variability of SLR and SST can be incorporated into the dynamic system model, so that interactions among sea level and SST at different oceans can be analyzed. This analysis requires long term historical data on sea levels and SSTs, which are available in the literature. The dynamic system model identified using this approach reveal that significant interactions exist among different regions of world's oceans, and the feedback mechanism observed between SST and SLR in global models do not necessarily apply to regional analysis. It is observed that the feedback mechanism that exists for each ocean may be different from one another. Projections based on a calibrated model reveal that sea levels and SST will rise significantly in the 21st century in the three oceans of the world. However the magnitude of rise will differ significantly among these three oceans. The magnitude of SLR in the Indian Ocean is expected to be lower than those in the other oceans such as the Pacific and the Atlantic oceans, while the magnitude of SST rise is the lowest in the Pacific Ocean. When the regional results are aggregated to represent the global trends, the global average of the mean SLR projected during the period 1990 to 2100 is approximately 59 cm with the 90% confidence interval of 55-63 cm. This outcome is consistent with IPCC estimates. However, this global estimate is not consistent with the SLR for each ocean as shown in the figure above.



IPCC. (2013). Summary for Policymakers. <http://www.ipcc.ch/report/ar5/wg1/> (accessed Nov. 2013).
 Chang, B., Guan, J. and Aral, M. M. (2015). "A Scientific Discourse: Climate Change and Sea-Level Rise," *ASCE Journal of Hydrologic Engineering*, Vol. 20, No. 1, pp. A4014003-1-14

Message from the President

Dear AIH members:



Looking ahead to the end of 2015 and beyond we have a variety of plans which I would like to share with you in this message, As I have indicated in my first message on March 2015, I will use the AIH bulletin from time-to-time to share these ideas with you, pass on to you the information on upcoming events and the actions of the AIH Executive Committee (EC) on these activities.

One of the important activity in my first message was AIH being the founding member of the Network of International Hydrological Association (NHA). That activity is ongoing and we have received many emails from our members indicating their personal or their organization's interest in participating in this activity. I thank you for your interest and support of this effort.

Other activities we are currently planning can be summarized as follows:

- Short courses, field courses and webinars organized by AIH members for AIH members and beyond;
- Linking with webinar providers to produce AIH talks that will provide Continuing Education (CEU) support;
- Compiling an international panel of experts willing to give their time to contribute to the web based short courses organized by AIH. This can be slide presentations or videos;
- Preparing AIH-branded educational material for AIH examinations (entry level) and beyond entry level educational material for our members in support of their Continuing Education (CEU) requirements; and,
- Developing a series of short thematic papers on key strategic topics to increase the awareness of government organizations, NGOs and also our members on current issues in the field of hydrology.

From the list above it is clear that online education and information sharing activity is in our agenda. As these short courses, presentations and webinars are developed **by our members**, the product will not only benefit AIH but it will also benefit our members. A percentage of the revenue stream generated will be shared by the individual(s) or organization(s) who are developing these products for AIH. The details of this process will be outlined on the document: **“Invitation to Submit Qualifications and Proposals to Conduct Technical Seminars, Short Courses and Webinars in the Field of Hydrology and Hydrologic Engineering for AIH Web Based Education.”** We will share this document with our members during the first few months of 2016. If you or your organization is interested in participating in this effort please do not wait for this document to come out. Let me know immediately if you are willing to contribute to this effort (my email address is below).

As I have indicated earlier, through these activities our goal is to make AIH a valuable organization to join in many different ways. In my opinion just saying “let's increase our membership” will not work. As the only professional qualification based certification program in the USA for the hydrology profession our members are already enjoying the credentials they deserve to conduct their professional activities. However, we also know that we have to go beyond that for AIH to become a more valuable organization to join. Towards that goal, we at AIH are also open to your suggestions and recommendations and we seek your support. Please do not hesitate to contact our Executive Director or me (directly) to share your ideas and recommendations.

With such an array of activities lined up, it's easy to predict that 2016 will be a busy and highly productive year for AIH. I would like to take this opportunity to thank all of you for your contributions in advance and wish our membership the best in 2016.

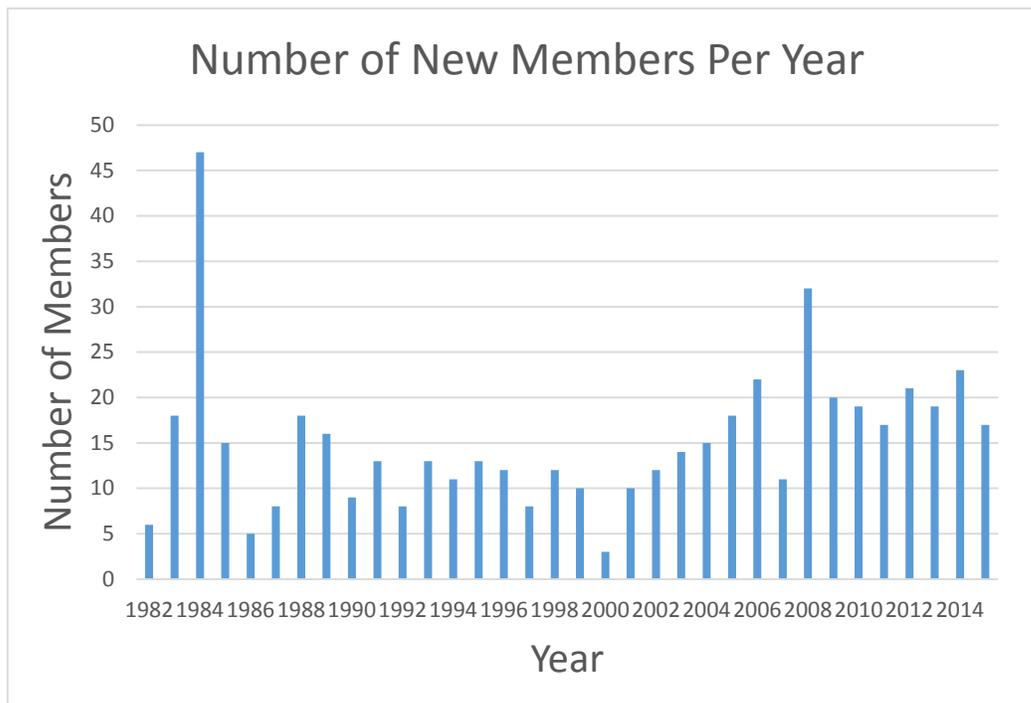
My best regards.
Mustafa M. Aral
President AIH
maral@ce.gatech.edu
October 1, 2015

From the Executive Director's Desk

Greetings from Carbondale, Illinois. It is that time again to report to all of you professional members of the institute about what is going on with the administration of AIH. I am honor to serve as your Executive director as I continue with my Academic and Research load as a Faculty member at the Civil and Environmental Engineering department of Southern Illinois University Carbondale. I take this opportunity to thank all of you for support and the many thankful messages that encourage me to do even more.

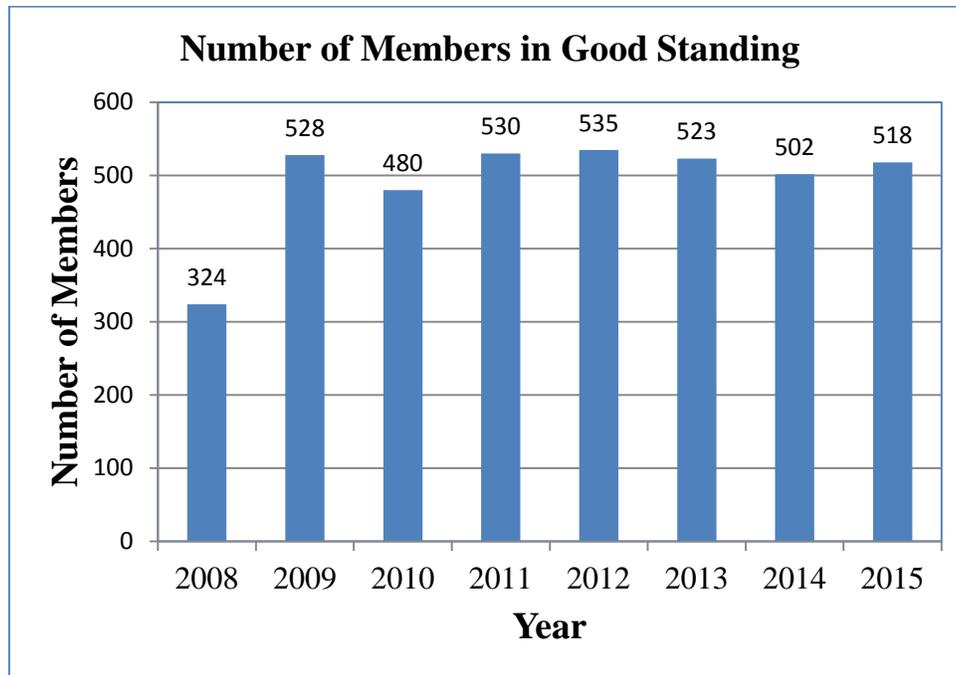


As an Academician and Hydrologists I like to maintain statistics and this time I would like to present to you how the constituency is distributed respect to the year of registration. As you know the first two numbers of your certification corresponds to the year you were certified. The chart below shows how many members have joined AIH since 1982. The last bar in this chart shows the number of new members at the time I am writing this report (11/1/2015).



For the current year, at the end of October, 2015, I have collected 89% of the dues from our members which is a good sign for an active membership. So far we have 515 members in good standing. Please help your institute to recruit more members. The more members we have the stronger AIH will be. Also please try to reach your Legislators and Colleagues and let them know that AIH exists and it is the only Professional Association that grants Certification following a set of strict rules and review of educational and professional qualifications.

The chart below shows how the number of members in good standing is changing over the years. Please take in consideration that the year 2015 is not over yet and we may have more members in good standing by the end of the year.



I have shared with you the upcoming International Conference on Hydrometeorology and Climate Change (ICHCC) to be held at the Universidad de Las Americas, Puebla, Mexico on November 11-13, 2015. The technical paper I have submitted was accepted and I will be presenting it during the conference. The members we have in Mexico are very enthusiastic in forming a section and they are working toward electing their officers and set the goals of their section. Many of these members are Faculty at the University of Puebla and they were very busy with matters of accreditation from ABET and they did not get enough time to concentrate in the formation of this section as of now. I hope during the time I will be there the idea is crystalized.

You may also notice that we continue including some articles from our members in our Newsletter. I invite everyone to send me the material they would like to publish in our future Newsletters. I kindly request that the articles should be related to our hydrological practice, not published already in other media. Please try to keep it informative and in length that is appropriate for a Newsletter. All prospective articles will be reviewed by our General Secretary and our VP for Publications. If there is not enough room for all the articles submitted, we will publish them in the following issues. Moreover, in our Newsletter we would like to include a specific section call "ON THE NEWS." If you have some news that you want to share with AIH members, you are cordially invited to do so. The news should be related with promotions, moving, new hiring, new grants or contracts, presentations on Professional Conferences, etc.

I hope the information I am providing serves to demonstrate that we are continuously working to improve our Institute. I invite any member willing to volunteer their time and become an officer of the Executive Committee, or you may also nominate some other person by contacting me. I will pass the information to a Nomination Committee within the EC.

Finally I kindly request that you send an email to your headquarters if you are changing your affiliation and/or email address. Maintaining our communication is paramount.

Any requests or suggestions to improve our service will be greatly appreciated.

Rolando Bravo
Executive Director

Reservoir Storage Reduction Due to Sedimentation

By
Michael A. Collins, PH

Introduction

Calculation of reservoir storage reduction due to sedimentation is important for the evaluation of the long term flood control or water supply capabilities of a reservoir. Brune [1953] developed a widely used empirical trap efficiency curve from some forty reservoir data sets. Fig. 1 presents Brune’s data for normal pond reservoirs (normal pond reservoirs do not incorporate sluicing or venting operations). Using assumptions commonly made in reservoir sedimentation assessment, an analytical solution is developed for reservoir volume reduction described by Brune’s data which may provide a tool for direct evaluation of reservoir life.

Trap Efficiency Curves

Let S be the reservoir storage at time t and S_0 be the reservoir storage at time $t = 0$ where Q is the annual volume of inflow to a reservoir. The annual sediment inflow rate is W (weight of sediment) while γ is the in-situ specific weight of deposited sediments. The common assumptions [Linsley et al., 1979; Linsley et al., 1982], and those made here, are that for the period of analysis, Q , W , and γ are constant. Consequently, if S is the storage at time $t \geq 0$,

$$\frac{dS}{dt} = -\frac{WE}{\gamma} \tag{1}$$

in which E is the sediment trap efficiency. Brune’s data shows a correlation between the ratio of storage S and inflow Q to reservoir detention time $T = S / Q$ (Fig. 1). Brune’s empirical correlation shown in Fig. 1 continues to be widely used or commonly suggested for use [Gottschalk, 1964; Gupta, 1989; Lewis et al., 2013; Linsley et al., 1979; Linsley et al., 1982; McCuen, 1989; Roberson, 1988] because of its simplicity, effectiveness, plausibility and its basis in measured field data.

Figure 1. Trap Efficiency for Normal Pounded Reservoirs (Data from Brune, 1953)

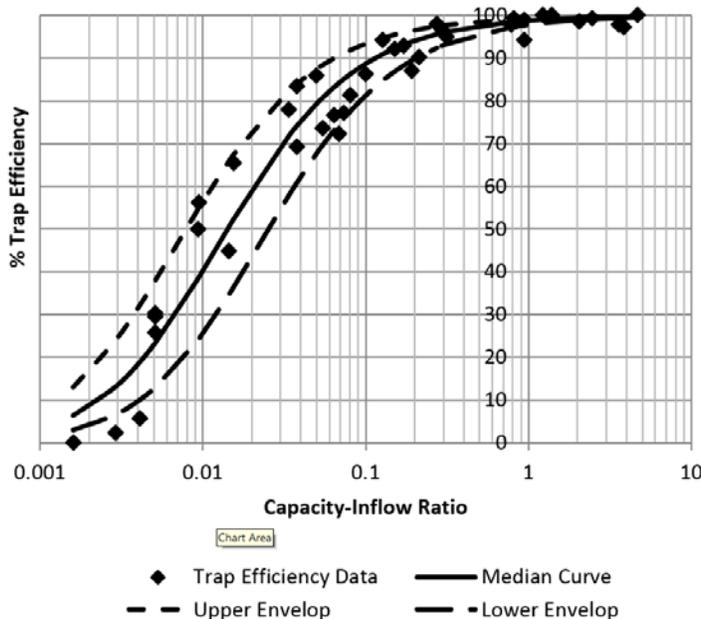
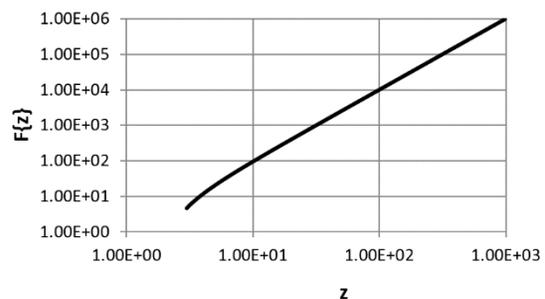


Figure 2. Dimensionless Storage Function F(z)



Linsley *et al.* [1982] give the empirical approximation to the median curve for Brune’s data as:

$$E = \left(1 - \left[\frac{1}{1 + \kappa T} \right] \right)^{3/2} \tag{2}$$

in which κ is an empirical coefficient estimated to be $\kappa = 120 / \text{year}$. Eq. (2) is plotted as the median curve in Fig. 1 and shows an acceptable approximation to Brune's data.

Reservoir Life

The temporal reduction in storage can be obtained by integrating Eq. (1). Let

$$\beta = \frac{W}{\gamma Q} \quad (3)$$

Thus, Eq. (1) becomes,

$$\frac{dT}{dt} = -\beta E \quad (4)$$

Defining $y = \kappa T$; $\alpha = \kappa\beta$ and $x = (1 + y)$, Eq. (4) can be written as,

$$-\alpha \frac{dt}{dx} = \left(\frac{x}{x-1} \right)^{3/2} \quad (5)$$

Letting $z^2 = x$, Eq. (5) can be transformed to,

$$-\alpha \frac{dt}{dz} = \left(\frac{z^2}{z^2-1} \right)^{1/2} + (z^2-1)^{1/2} + (z^2-1)^{3/2} \quad (6)$$

The terms of Eq. (6) in brackets can be integrated in terms of elementary functions [Pierce et al., 1956]. Thus, integrating Eq. (6) from z_o to z_e as t varies from $t = 0$ to t_e , where t_e is the effective reservoir life, we obtain,

$$\alpha t_e = F\{z_2\} - F\{z_1\} \quad (7)$$

in which $F\{z\}$ is the dimensionless function,

$$F\{z\} = \left(z(z^2-1)^{1/2} \right) + 3 \ln \left(z - (z^2-1)^{1/2} \right) - \left(\frac{2z}{(z^2-1)^{1/2}} \right) \quad (8)$$

or,

$$\alpha t_e = F \left\{ \left(1 + \left(\frac{\kappa S_o}{Q} \right) \right)^{1/2} \right\} - F \left\{ \left(1 + \left(\frac{\kappa S_e}{Q} \right) \right)^{1/2} \right\} \quad (9)$$

in which t_e is the reservoir life, where the terminal storage of the reservoir at t_e is S_e and S_o is the initial storage. The function $F\{z\}$ is plotted in Fig. 2. Note that the smallest and largest value of the argument of F corresponds to $S_e = 0$ and $S_o = \infty$. Thus, the argument of F varies from 1 to infinity.

Example: We illustrate the above result using a problem solved numerically by Linsley and Franzini [1979]. To be determined is the life of a reservoir with initial storage $S_o = 30,000$ acre-feet, inflow $Q = 60,000$ acre-feet per year, $W = 200,000$ tons/year with sediment having an in-place specific weight of $\gamma = 70$ pounds per cubic feet, with $\kappa = 120 / \text{year}$,

$$Q = \frac{120}{60000} \text{ acre-ft}; \beta = \frac{W}{\gamma Q} = \frac{200,000 \times 2000}{(70)(60,000)(43,560)} = 0.002186; \quad (10)$$

$$\alpha = \kappa\beta = 120(0.002186) / \text{year} = 0.261 / \text{year}$$

If the effective life of the reservoir is defined as the time t_e to have an 80% reduction in storage, i.e., a change in storage from $S_o = 30,000$ to $S_e = 6,000$ acre-feet at $t = t_e$, then,

$$1 + \frac{\kappa S_o}{Q} = z^2 = 61; \quad 1 + \frac{\kappa S_e}{Q} = z^2 = 13 \quad (11)$$

From Eq. (8),

$$\alpha t_e = F \{61^{1/2}\} - F \{13^{1/2}\} = 47.283 \quad (12)$$

Thus $t_e = 181.16$ years, whereas, Linsley and Franzini [1979] obtain a useful life of 196 years in their numerical solution.

Extensions

The above analyses can be performed for the enveloping curves to assess likely minimum and maximum reservoir life if the enveloping curves rather than the median efficiency curve of Fig. 1 are used. The equations for the enveloping curves are described similar to that for the median curve if the following values for κ are used:

Upper Envelope $\Rightarrow \kappa = 216 / \text{year}$; *Median* $\Rightarrow \kappa = 120 / \text{year}$; *Lower Envelope* $\Rightarrow \kappa = 67 / \text{year}$

Long term variations in annual inflow due to such things as drought could be evaluated by breaking the total time horizon into sequential sub-horizons with representative values of Q varying from one time sub-horizon to the next.

Conclusion

It is recommended that the above analysis be used to provide a simplified method for preliminary analysis in planning stages of a study. The above procedure would not replace more detailed numerical modeling analysis that is used in the literature.

References

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- Pierce, B. O. and Foster, R.M., 1956. A Short Table of Integrals, Fourth Printing, Blaisdell Publishing Col, New York.
- Roberson, J. A., Cassidy, J. J., Chaudhry, J. A., 1988. Hydraulic Engineering, Houghton Mifflin Co., Boston, Mass., 365-367.

NOTE: We encourage our members to submit their short technical contributions to AIH Bulletin. These contributions will be reviewed and edited before publication to fit the contribution to the AIH Bulletin format.

New Members in 2015

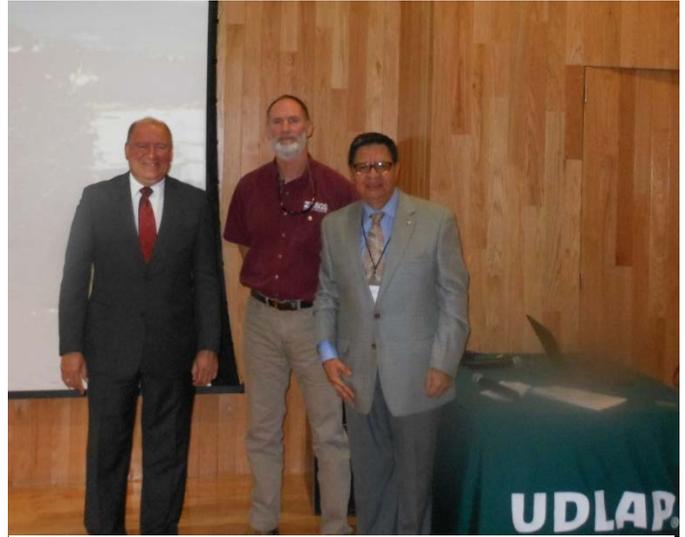
Please welcome our new members who joined AIH during 2015.

Hydrologist			
Name	Certification	City	State
Banta, Matthew D.	15-HGW-7004	Reno	NV
Bates, Guy W.	15-H-7013	Morro Bay	CA
Bruant, Robert G.	15-HWQ-7007	Irving	TX
Bruant, Robert G.	15-HGW-7008	Irving	TX
Corrao, Mark V.	15-H-7006	Moscow	ID
Dean, Joey E.	15-HIT-102	Round Mountain	NV
Karlovits, Gregory S.	15-H-7001	Lakewood	CO
Konduru-Narsimha, Vamshi Krishna	15-H-7016	Rochester Hills	MI
Langdon, Margaret E.	15-H-7012	Anchorage	AK
Larson, Robert	15-H-7002	Burnaby	BC-Canada
Sartori Sira	15-H-7003	Timnath	CO
Saylor, Daney	15-H-7011	Irvine	CA
Sigstedt, Sophia C.	15-HGW-7015	Boulder	CO
Torrance, Keith W.	15-HWQ-7009	Anchorage	AK
Veatch, William C.	15-H-7005	New Orleans	LA
Widzga, Aleksandra M.	15-H-7014	Arroyo Grande	CA
Zeweldi, Dawit A.	15-H-7010	Dallas	TX
Hydrologic Technician			
Hoffmann, Brett K.	15-HT-1060	Colonia	NJ
Meadows, Matthew W.	15-HT-1062	Auberry	CA
Woodward, Casandra	15-HT-1061	Reno	NV

Oregon Water Resources Department: In the past 10 years, the Oregon Water Resources Department (OWRD) has made numerous improvements to its hydrographics program, making high quality surface-water data more accessible to water managers, forecasters, scientists, and the public. Measurements of discharge are still often made the traditional way with AA and pygmy meters, but increasingly acoustic Doppler devices are used, especially for difficult high-flow conditions. Prior to the 1990's, records of stream stage were collected using chart and punch-tape recorders. In 2007, OWRD retired its chart recorders and now all sites use digital recorders. Float and pulley systems for sensing changes in stage are actively being replaced with pressure transducers and radar sensors. More than half of OWRD's 220 gages now transmit near real-time data using GOES telemetry, whereas before 2003, data often were not processed for months or years. In addition to improvements in field equipment, OWRD has invested in software that allows regional field staff to input data into a shared database. The uploaded data are reviewed by staff in the Salem headquarters and posted as provisional, usually within 24- to 48-hours of initial entry. Stage data transmitted from the sites using the GOES satellite system are now available on OWRD's near real-time webpage within an hour or two. (<http://www.oregon.gov/OWRD/pages/index.aspx>)

Formation of Mexican Section of AIH

The International Conference on Hydrometeorology and Climate Change (ICHCC) at the Universidad de Las Americas, Puebla (UDLAP), Mexico took place on November 11-13, 2015. During this meeting, Dr. Emmitt C. Witt (our past President) and Dr. Rolando Bravo (Executive Director) represented AIH and presented technical papers on specific research related to surface water hydrology. At the conclusion of the conference Dr. Bravo congratulated the members of the Mexican Section for their efforts in the formation of this International Section of the American Institute of Hydrology. This section is being organized by 10 Mexican members of our organization through the UDLAP campus and will establish our first international section within AIH. Dr. Jose Raynal-Villasenor, Dean of the Engineering College of UDLAP, will serve as the first President of this new Section. Dr. Raynal presented a formal document containing the annual action plan and goals for the new organization to Dr. Bravo and Dr. Witt. This document will be presented to the AIH Executive Committee for discussion and final approval during the next committee meeting. The picture above was taken at the conclusion of the formal announcement of the Mexico Section.



From left to right: Dr. Raynal Villasenor, Dr. Witt and Dr. Bravo

AIH Excerpts from the Archives

Dear AIH members, under this column you will find most recent information on archival data, information and reports that appeared in the recent literature in the field of hydrology. We hope you will find it useful and interesting. If you would like to contribute to this column you may provide your paragraph with a link to (maral@ce.gatech.edu).

2015 World Water Day website live:



The World Water Day website takes the visitors on a journey to learn about water and sustainable development through short informative texts and visuals before proposing ideas how to celebrate World Water Day or learn more. There is also material available for download and an events section where organizations and groups can promote and search for events happening in their regions. Please visit the site for more information: <http://www.unwater.org/news-events/news-details/en/c/277316/>

2015 World Environment Day:



Climate change is a major challenge for Small Island Developing States (SIDS), as global warming is causing ocean levels to rise. Due to their small size and isolation, SIDS are more vulnerable to natural and environmental disasters, climate change and sea-level rise. However, these islands have also been successful in overcoming their environmental problems. From Palau to Puerto Rico, the stories of resiliency and innovation abound. From Trinidad & Tobago to Tonga, Samoa to Suriname, the problems that these small islands face – climate change, waste management, unsustainable consumption, degradation of natural resources, extreme natural disasters in the midst of overpopulation and continuing industrialization – are the problems that face us all. World Environment Day is an annual event that is aimed at beginning the biggest and the most widely celebrated global day for positive environmental action. World Environment day activities takes place all year round and climax on 5 June every year, involving everyone from everywhere. Please visit the site for more information: <http://www.greeningtheblue.org/event/world-environment-day-5-june-2015>

Future of extremes as climate changes:



Some regions will have too much water and others will have too little, according to a comprehensive new study on climate change by the World Bank Group. Extremes of more or less water will increase in its extremity and also in its frequency of occurrence. This look at the effects of a warming world

on the Middle East, Latin America and Central Asia is awash with suggestions to prepare for a changing climate. For a world perspective on these subjects visit: <http://www.worldbank.org/climate>

Mega-droughts in the USA:



Mega-droughts are persistent droughts that last for a decade or longer—they can be devastating to both natural ecosystems and human societies. Now, a new study has found (*Science Advances* on February 1, 2015) that the southwestern and central plains regions of the United States are at high risk for a mega-drought in the latter half of the 21st century if greenhouse gas concentrations continue to rise. Currently, the southwestern U.S. and the central plains face a less than 12%

chance of experiencing a mega-drought, the scientists say. In the future, if greenhouse gases continue to rise at a high rate (i.e., atmospheric CO₂ concentrations of about 1,370 parts per million by 2100), the risk for a mega-drought in this region during 2050 to 2100 could skyrocket to 80% or greater. Even if greenhouse gas emissions were kept to more moderate levels, the risk for a mega-drought may still be as high as 60%. For more visit: <http://earthsky.org/earth/high-risk-for-future-u-s-megadroughts>

Hydraulic Fracking, pro-, con- and the process:



Geologic formations may contain large quantities of oil or gas, but have a poor flow rate due to low permeability, or from damage or clogging of the formation during drilling. This is particularly true for tight sands, shales and coalbed methane formations. Hydraulic fracturing (aka fracking, which rhymes with cracking) stimulates wells drilled into these formations, making profitable otherwise prohibitively expensive extraction. Within the past

decade, the combination of hydraulic fracturing with horizontal drilling has opened up shale deposits across the country and brought large-scale natural gas drilling to new regions. - See more on pro-, con- discussion of this process at: http://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.VOZcNE10yrU

6.9 magnitude earthquake triggers tsunami in Japan:



A 6.9 magnitude earthquake off the northeastern coast of Japan unleashed a small tsunami on Feb. 17, 2015. It was along the same coastline that was devastated by a tsunami in March 2011 which left more than 18,000 people dead. A wave of 20 centimeters was recorded off the city of Kuji at 9:07 a.m. local time (0007 GMT), way below the possible one meter tsunami that the Japan Meteorological Agency warned could hit. See for more: <http://www.thenational.ae/world/east-asia/69-magnitude-quake-in-japan-triggers-tsunami>

New York Gov. Cuomo establishes the profession of geology:



On Friday, November 21, 2014 the Governor signed Chapter 475 of the laws of 2014 that provides for the licensure of professional geologists under Title VIII of the Education Law. The Law does not take effect until November 2016. Under the provisions of the new law, Geology will be added to the current State Board for Engineering and Land Surveying. To implement the licensing provisions, the Board of Regents must first appoint qualified geologists to the board. The State Board will assist the Regents and the Department in

developing regulations necessary to license qualified individuals in the new profession. See for more: <http://www.op.nysed.gov/prof/geo/>

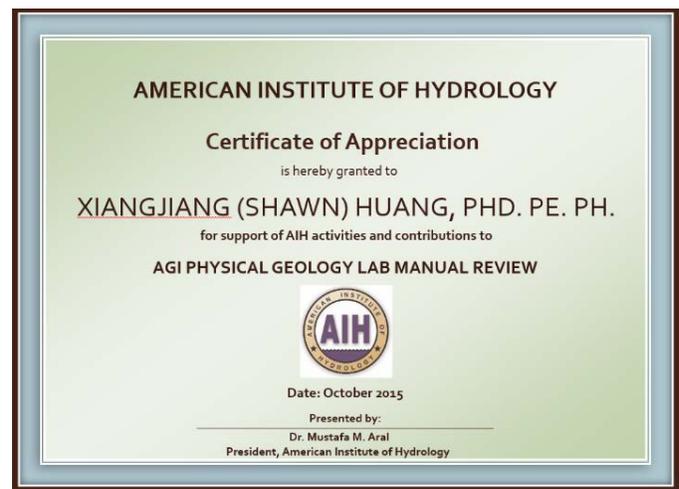
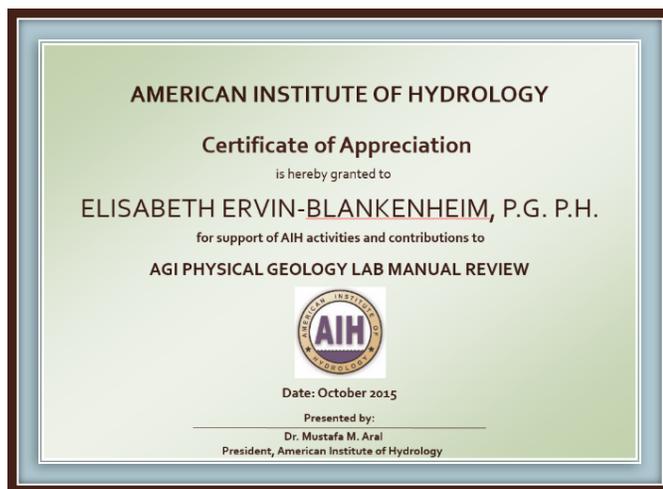
News from Washington:



During March 2015, the President released his fiscal year (FY) 2016 budget request detailing proposed spending levels for federal research, health, and education programs. The President's proposal includes increased funding for core environmental research agencies such as the U.S. Geological Survey (USGS – 14.3% increase), the Environmental Protection Agency (EPA – 5.6% increase), the National Science Foundation (NSF – 5.2% increase), U.S. Department of Agriculture's (USDA – 16.4% increase), Department of Energy (DOE) Office of Science (5.4% increase) and the National Oceanic and Atmospheric Administration (NOAA – 9.8% increase). However, the fate of these proposed funding increases are contingent upon whether Congress and the President can come to an agreement on overall spending caps in the annual appropriations process. These negotiations may be impacted by the Republican's continued offensive against the Administration's Clean Power Plan rule, as well as by the fate of the Keystone XL Pipeline legislation. Following the President's February 24th veto of the Keystone bill, Republicans have indicated they will attempt an override vote and consider adding pipeline construction language to appropriations bills.

AGI Physical Geology Laboratory Manual Review

From time to time we receive requests from our sister organizations to give them a hand in our joint effort of enhancing our profession. Most recently we have received a request from American Geosciences Institute (AGI) for a review of the “**AGI Physical Geology Lab Manual**” they were preparing. As you may recall we have shared this request with our membership and sought support for this task. We are pleased to report that the response we have received from our members were over and beyond our expectations and we had to make a selection among many who volunteered for this task. The review was successfully completed for AGI and we have submitted our report. As a token of their effort, the following members have received the AIH Certificate of Appreciation award. We would like to acknowledge their support of AIH activities and their contributions in this review.



Congratulations

We are very pleased to share with our membership the recognition **Lorne G. Everett** (AIH-83-H-164; AIH-89-HGW-836) has received as the **Hon. D. AAWRE** from **AAWRE**.



Our congratulation goes to our colleague **Dr. David Williams** (AIH-96-H-1146) who is also a member of the EC of AIH and has served our institute in many different capacities in the past. The award is the **Karl Mohr Distinguished Service Award** bestowed to him by the **Flood Plain Management Association** in recognition of his long term contributions to the profession. This award is given to those who have clearly influenced the realm of national floodplain management policies or activities, such as education, research, litigation, outreach and implementation.

Karl Mohr Distinguished Service Award for National Activities

David T. Williams, PhD, PE, PH, CFM,
CPESC, F.ASCE, F.EWRI, D.WRE

President

DTW & Associates, Engineering, LLC
Ft. Collins, CO

Our colleague **Dr. David Williams** is also recognized with the **Sustained Contributor Award by International Erosion Control Association**. This award recognizes an IECA member who has provided distinguished service to the IECA and has made outstanding contributions to improve the erosion and sediment control industry for a sustained period of time. Winners of this award have demonstrated leadership through a significant and long-term contribution to the erosion and sediment control industry and leadership in IECA through education, government involvement, research, establishment of standards or policies or the development of technology activities.

Dr. David Williams is also a Fellow (May 2015) of **ASCE Environmental Water Resources Institute (EWRI)**. EWRI Fellow is someone who is recognized by their peers as a leader in Water Resources and/or Environmental Engineering.

We recognize Professor **Vijay P. Singh**, who is currently Distinguished Professor and the Inaugural holder of Caroline and William N. Lehrer Distinguished Chair in Water Engineering at Texas A&M University, who has been elected **Distinguished Member of ASCE** - the highest award that ASCE bestows on its members. In June he also received the Crystal Drop Award given by International Water Resources Association (IWRA). Professor Singh served AIH as its President and Senior Vice President as well as President of the Louisiana Section of AIH.

