

FINAL CONFERENCE PROGRAM BROCHURE

Welcome
to the
**Joint American Society of Nepalese Engineers (ASNEngr)
and Computer Association of Nepal-USA (CAN-USA) Annual
Conference**

(2016 Joint ASNEngr/CAN-USA Annual Conference)

(9th ASNEngr and CAN-USA Annual Conference)

**“Advances in Engineering, Science and Technology for Sustainable
Development”**

Conference Organized By

American Society of Nepalese Engineers (ASNEngr)

P. O. Box 39524

Baltimore, Maryland 21212-9998, USA

Email: info@ASNEngr.org / Web: www.ASNEngr.org

and

Computer Association of Nepal, USA (CAN-USA)

PO Box 105, Pleasanton, California 94566, USA

Email: info@can-usa.org / Web: www.can-usa.org

Conference Hosted By

The Greater Houston Chapter of ASNEngr (HOU-ASNEngr), Houston, TX

Venue

Humble Civic Center

8233 Will Clayton Pkwy, Humble, TX 77338, USA

Date

Saturday, September 17 - Sunday, September 18, 2016

Conference Websites

www.ASNEngr.org and www.can-usa.org

WELCOME FROM CONFERENCE CHAIRS

On behalf of the Conference Organizing Committee of the American Society of Nepalese Engineers (ASNEngr) and the Computer Association of Nepal-USA (CAN-USA), we would like to extend our greetings and warm welcome to you to the 2016 Joint ASNEngr/CAN-USA Annual Conference being held at Humble Civic Center, Humble, Texas on 17th and 18th of September 2016. This conference, ninth in the series for each organization, and sixth joint endeavor, is hosted by the Greater Houston Chapter of the American Society of Nepalese Engineers (HOU-ASNEngr), Houston, TX.

This joint conference has a fitting theme of “*Advances in Engineering, Science and Technology for Sustainable Development*” with the principal objective of bringing the engineers, scientists, students and professionals in related areas together on a common platform for sharing and disseminating knowledge and experience with each other and with broader scientific and engineering communities.

The technical program includes four sessions, including “*Keynote/Plenary Lecture;*” “*Earthquake Preparedness, Disaster Relief, Infrastructure Safety and Sustainability;*” “*Environment, Water Resources and Climate Change;*” and “*Recent Advances in Engineering and Sciences.*” Each of these sessions will feature individual presentations and question-answer forum to facilitate sharing of knowledge and experience among fellow engineers, scientists and professionals. This year we are proud to have invited guest Mr. Jiban Prakash Shrestha, Deputy Chief of Mission (DCM), Embassy of Nepal, Washington D.C. We are also very proud to have a plenary/keynote lecture on very timely and important topic related to the conference theme presented by a team of distinguished faculty researchers, including Drs. Bal Krishna Bal, Omprakash Gnawali, Jennifer Vardeman-Winter, and Rakesh Verma from the University of Houston, Houston, TX. The presenters and participants in the 3 regular technical sessions are engineers, scientists, and professionals who come from a broad base, including academia, government agencies, and private and multinational industries. The program covers a wide variety of scientific areas ranging from disaster preparedness and earthquake safety to biomedical sciences, energy and environmental issues to recent advances in engineering.

We would like to express our heartfelt gratitude to the authors/presenters who submitted their abstracts and are willing to share their research results and knowledge to the conference attendees. We believe that the presentations and forum for discussion at the conference will give all the participants ample opportunities to share their knowledge of research and development in the pertinent areas and create a common discussion ground for further enhancement of such research and knowledge.

We would like to thank the conference attendees for taking their valuable time in participating and supporting the conference. Our sincere thanks are due to all Conference Organizing Committee members, in particular the Local Organizing Committee members for their tireless effort and countless hours of voluntary service and to the members of the Board of Directors of ASNEngr and CAN-USA for their valuable suggestions and support.

Last but not least, we would like to express our deep appreciations to each and every distinguished invited guest in attendance, and all sponsors/donors for their generous support contributing to the success of this conference. We wish you have an enriching and memorable time at the conference and are committed to making that happen.

With warm regards,



Jagannath Ghimire., P.E.
General Chair
President, ASNEngr
CB&I, Houston, TX,
USA



Pradeep Khanal
General Co-Chair
Immediate Past
President, CAN-USA
Intel Corporation,
Santa Clara, CA, USA.



Ramesh B. Malla, Ph.D.
Technical Chair
Founding President,
ASNEngr
University of Connecticut,
Storrs, CT, USA



Rabin Bhattarai, Ph.D.
Technical Co-Chair
University of Illinois,
Urbana-Champaign, IL,
USA



Rajendra Shrestha, P.E.
Chair, Local Organizing
Committee
City of Pearland,
Pearland, TX, USA



**American Society of Nepalese Engineers (ASNEng) and Computer Association of
Nepal-USA (CAN-USA)
Present**

2016 Joint ASNEng/CAN-USA Annual Conference

(9th ASNEng and CAN-USA Annual Conference)

Theme: “Advances in Engineering, Science and Technology for Sustainable Development”

Date: September 17-18, 2016

Venue: Humble Civic Center
8233 Will Clayton Pkwy, Humble, TX 77338

Hosted by: The Greater Houston Chapter of ASNEng (HOU-ASNEng), Houston, TX

*You are cordially invited to attend the conference.
For registration, please visit – <http://www.asnengr.org/conference>*

-- Overall Program Schedule at-a-Glance--

<u>Saturday, September 17, 2016</u>		<u>Venue/Room</u>
8:00AM – 9:00 AM	<i>Light Breakfast</i>	(Ballroom 2)
8:00 AM - 1 PM	<i>On-Site Registration</i>	(Ballroom 2)
9:00 AM - 9:45 AM	<i>Conference Opening & Guest Speakers</i>	(Ballroom 2)
9:45 AM - 10:35 AM	<i>Keynote/Plenary Lecture</i>	(Ballroom 2)
10:45 AM - 11:45 AM	<i>Session I</i>	(Ballroom 2)
Session Title: <i>Earthquake, Infrastructure and Sustainability</i> (3 Presentations; 20 minutes each)		
11:45 AM - 1:15 PM	<i>Luncheon</i>	(Ballroom 2)
(Special Program: Career Development) (Special presentation: ASNEng Involvement in Nepal)		
1:20 PM - 3:00 PM	<i>Session II</i>	(Ballroom 2)
Session Title: <i>Environment, Water Resources, and Climate Change</i> (5 Presentations; 20 minutes each)		
3:20 PM - 5:00 PM	<i>Session III</i>	(Ballroom 2)
Session Title: <i>Recent Advances in Engineering and Sciences</i> (5 Presentations; 20 minutes each)		
5:00 PM - 6:00 PM	<i>ASNEng Board of Directors Meeting</i> (All attendees are welcome to attend.)	(Ballroom 2)
6:30 PM - 10:00 PM	<i>Networking Dinner and Cultural Program</i>	(Ballroom 2)
 <u>Sunday, September 18, 2016</u>		
8:00 AM – 9:30 AM	<i>Networking Breakfast</i> (All attendees are welcome to attend)	(Venue: Hotel-Comfort Suites)
10:00 AM	<i>Conference Closure</i>	
10:30 AM	Sightseeing greater Houston area (for those interested) -----*****-----	



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Detail Conference Program Schedule

Saturday, September 17, 2016

<u>On-Site Registration</u>	8:00 AM - 1:00 PM	<i>Ballroom 2</i>
<u>Light Breakfast</u>	8:00 AM – 9:00 AM	<i>Ballroom 2</i>
<u>Conference Opening</u>	9:00 AM - 9:45 AM	<i>Ballroom 2</i>

Conference Welcome and Organization Introduction–

By **Jagannath Ghimire, P.E.**, Conference General Chair and President, American Society of Nepalese Engineers (ASNEngr); and
Suresh Ojha, President, Computer Association of Nepal-USA (CAN-USA).

Conference Program Overview –

by **Ramesh B. Malla, Ph.D.**, Conference Technical Chair and Founding President, ASNEngr; and
Rabin Bhattarai, Ph.D., Conference Technical Co-Chair, ASNEngr.

Local Organizing Committee Welcome –

by **Rajendra Shrestha, P.E.**, Chair, Conference Local Organizing Committee and President, Houston Chapter of ASNEngr.

Special Guest Speaker:
Mr. Jiban Prakash Shrestha, Deputy Chief of Mission (DCM)
Embassy of Nepal, Washington DC.
“Inaugural Remark”

Welcome Remarks from NAH –

by **Jyoti K. Ghimirey**, President, Nepalese Association of Houston (NAH), Houston, Texas.

Vote of Thanks –

by **Rajendra K. Shrestha, Ph.D.**, Immediate Past President, ASNEngr; and
Thakur P. Dhakal, P.E., General Secretary, ASNEngr.

Plenary/ Keynote/ Session 9:45 AM - 10:35 AM (Ballroom 2)
Session Chair: Ramesh B. Malla, Ph.D., Founding President, ASNEngr; University of Connecticut, Storrs, CT.

“Understanding Disaster Preparedness and Recovery: A Case Study from Nepal Earthquakes of 2015”
Bal Krishna Bal, Ph.D.⁺, Department of Computer Science; **Omprakash Gnawali, Ph.D.**, Department of Computer Science; **Jennifer Vardeman-Winter, Ph.D.**, School of Communication; and **Rakesh Verma, Ph.D.**, Department of Computer Science, University of Houston, TX.
 (*Currently, Computer Science and Engineering, Kathmandu University, Nepal)

Break

10:35 AM – 10:45 AM

Technical Session I

10:45 AM – 11:45 AM

(Ballroom 2)

Session Title: Earthquake Preparedness, Disaster Relief, Infrastructure Safety and Sustainability

Session Chairs: Rajendra Shrestha, Ph.D., ConocoPhillips, Houston, TX; and **Yogendra Jonchhe**, SUNY Alfred State College (Emeritus), Hornell, NY.

10:45 AM – 11:05 AM

“Issues and Challenges for Development of Disaster Resilient Hydropower in Nepal; Lessons Learned from 2015 Earthquake” by **Sanjeeb Baral**, Ministry of Energy, Nepal (Currently, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY).

11:05 AM – 11:25 AM

“Geodetic Imaging for Earthquake Research & Education” by **Ramesh L Shrestha, Ph.D.**, **Craig Glennie, Ph.D.**, **Bill Carter, Ph.D.**, and **Hyongki Lee, Ph.D.**, National Center for Airborne Laser Mapping, Department of Civil and Environmental Engineering, University of Houston, Houston, TX.

11:25 AM – 11:45 AM

"Application of Seismic Belts for Strengthening of Un-Reinforced Masonry Wall Panels with Openings" by **Sudhira De Silva, Ph.D.**, Department of Civil and Environmental Engineering, University of Ruhuna, Sri Lanka, and **Ramesh B. Malla, Ph.D.**, Department of Civil and Environmental Engineering, University of Connecticut, Storrs, CT.

Lunch Break (Provided)

11:45 AM - 1:15 PM

(Ballroom 2)

Special Program & Presentation:

12:15 PM – 12:55 PM: **Special Program - “Career Development”**

Moderator: Janak Thapa, P.E., CH2M Hill, Houston, TX.

Panelists/ Presenters: Pratistha Pradhan Paudel, D. Eng., P.E., City of Houston, Houston, TX, and **Prakash Adhikari**, Saratoga Homes, Houston, TX.

12:55 PM – 1:15 PM: **Special presentation - “ASNEng’s Involvement in Nepal, Lessons Learned and Challenges”** by **Ananta Baidya, P.E.**, Chair, ASNEng Nepal Liaison Committee, San Diego, CA.

Technical Session II

1:20 PM - 3:00 PM

(Ballroom 2)

Session Title: Environment, Water Resources, and Climate Change

Session Chairs: Ananda Paudel, Ph.D., Metropolitan State University of Denver, Denver, Co. and **Ram C. Poudel**, Institute of Engineering/Pulchowk, Tribhuvan University, Nepal (Currently at University of Massachusetts, Amherst, MA.)

1:20 PM – 1:40 PM

“Emerging Contaminants in Water: Should We Be Worried?” by **Rajendra P. Bhattarai, P.E.**, BCEE, Austin Water, City of Austin, Austin, TX.

1:40 PM – 2:00 PM

“Adsorption of As (V) to titanium dioxide nanoparticles: effect of particle size, solid concentration and other metals” by **Dipendra Wagle** and **Heather Shipley, Ph.D.**, Department of Civil and Environmental Engineering, University of Texas at San Antonio, San Antonio, TX.

2:00 PM – 2:20 PM

“Development of a Web Based Tool to Estimate Irrigation Water Requirements for Agricultural Crops and Urban Landscape in Texas” by **Ripendra Awal, Ph.D.** and **Ali Fares, Ph.D.**, College of Agriculture and Human Sciences, Prairie View A&M University, Prairie View, TX.

2:20 PM – 2:40 PM

“Sustainability through Resource Recovery: Beyond the 3R's” by **Dilli Neupane, P.E.** and **Khis Suravallop, P.E.**, Sustainable Engineering for Energy & Environment (SE-3), Falls Church, VA; and **Thakur Dhakal, P.E.**, Fairfax County Government, Fairfax, VA.

2:40 PM – 3:00 PM

“Assessment of climate change impact on water availability in Bagmati River basin, Nepal” by **Rabin Bhattarai, Ph.D.** and **Vaskar Dahal**, Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL; and **Narendra Man Shakya, Ph.D.**, Department of Civil Engineering, Institute of Engineering, Trubhuvan University, Nepal.

Break

3:00 PM – 3:20 PM

Technical Session III

3:20 PM – 5:00 PM

(Ballroom 2)

Session Title: *Recent Advances in Engineering and Sciences*

Session Chairs: *Rajendra Bhattarai, P.E., BCEE*, Austin Water, City of Austin, Austin, TX;
and *Subash Paudel, P.E.*, Burns & McDonnell, Houston, TX

3:20 PM – 3:40 PM

"Multifunctional Gold Nanoparticles for Gene Therapy with High Selectivity" by *Binita Shrestha* and *Liang Tang, Ph.D.*, Department of Biomedical Engineering, University of Texas at San Antonio, and Graduate program in Biomedical Engineering, University of Texas Health Science Centre, San Antonio, TX.

3:40 PM – 4:00 PM

"Energetics Foundation of Statistical Economics" by *Ram C. Poudel*, and *Jon G. McGowan, Ph.D.*, Department of Mechanical and Industrial Engineering, University of Massachusetts, Amherst, MA.

4:00 PM – 4:20 PM

"Optimal Energy Generation and Distribution Planning under Supply Uncertainty" by *Govind R. Joshi* and *Ebisa D. Wollega, Ph.D.*, Department of Engineering, Colorado State University – Pueblo, CO; and *Ananda M. Paudel, Ph.D.*, Department of Engineering Technology, Metropolitan State University of Denver, Denver, CO.

4:20 PM – 4:40 PM

"Permission Attributes in Administration of Role Based Access Control Model" by *Jiwan Ninglekhu* and *Ram Krishnan, Ph.D.*, Institute for Cyber Security, Department of Electrical and Computer Engineering, University of Texas at San Antonio, San Antonio, TX.

4:40 PM – 5:00 PM

"Rehabilitation of damaged reinforced concrete members using Fiber Reinforced Polymer Composites" by *Sandeep Pyakurel, Ph.D., P.E.*, Gall Zeidler Consultants, Ashburn, VA; and *Udaya B. Halabe, Ph.D., P.E.*, Department of Civil and Environmental Engineering, Constructed Facilities Center, West Virginia University, Morgantown, WV.

ASNEngr Board of Directors Meeting

5:00 PM – 6:00 PM

(Ballroom 2)

(All attendees are welcome to attend)

Networking Dinner

6:30 PM – 8:00 PM

(Ballroom 2)

Cultural Program

8:00 PM – 10:00 PM

(Ballroom 2)

Moderator: *Janak Thapa, P.E.*, Katy, TX.

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Conference Chairs:

General Co-Chairs:

Jagannath Ghimire, P.E., General Chair (*President, ASNEngr*)
CB&I, Houston, TX (E-mail: JGhimire.asne@gmail.com)

Pradeep Khanal, General Co-Chair (*Immediate Past President, CAN-USA*)
Intel Corp., Santa Clara, CA (E-mail: PradeepKhanal@gmail.com)

Technical Chair/Co-Chair:

Ramesh B. Malla, Ph.D. Technical Chair (*Founding/Past President, ASNEngr*)
University of Connecticut, Storrs, CT (E-mail: MallaR@engr.uconn.edu)

Rabin Bhattarai, Ph.D., Technical Co-Chair (*Newsletter Committee Chair, ASNEngr*)
University of Illinois, Urbana-Champaign, IL (E-mail: BhattaraiRabin@gmail.com)

Local Organizing Committee Chair

Rajendra Shrestha, P.E., Local Organizing Chair, (*ASNEngr Houston Chapter President*)
City of Pearland, Pearland, TX (E-mail: errajendra@hotmail.com)

Steering Committee

Jagannath Ghimire, P.E. (*General Co-Chair*), Houston, TX
Pradeep Khanal, (*General Co-Chair*), Santa Clara, CA
Bibhuti Baral, York, PA
Rabin Bhattarai, Ph.D., Urbana, IL (*Technical co-Chair*)
Rajendra Bhattarai, P.E., BCEE, Austin, TX
Hira Dangol, San Jose, CA
Thakur Dhakal, P.E., Herndon, VA
Sanjaya Gajurel, Ph.D., Cleveland, OH
Pujan Joshi, Storrs, CT (Website/IT Lead)
Upendra L. Karna, P.E., D.Eng., Lambertville, NJ
Kanhaiya Kayastha, P.E., S.E., La Habra, CA
Surya Lamsal, P.E., Ozone Park, NY
Ramesh Malla, Ph.D., Storrs, CT (*Technical Chair*)
Suresh Ojha, MSEE, Santa Clara, CA
Deependra Pokharel, Chantilly, MD
Rajendra Shrestha, Ph.D., Cypress, TX
Rajendra Shrestha, P.E., Pearland, TX (*Local Organizing Chair*)
Sushil Subedi, Little Rock, AR
Surya Thapa, P.E., Solon, OH
Ksheetij Thapaliya, Dublin, CA

Technical Committee

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Rabin Bhattarai, Ph.D. (*Co-Chair*), Urbana, IL
Prabhat Adhikari, MD., Los Angeles, CA
Ananta Baidya, P.E., San Diego, CA
Rajendra Bhattarai, P.E., BCEE, Austin, TX

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Sanjaya Gajurel, Ph.D., Cleveland, OH
Jagannath Ghimire, P.E., Houston, TX
Deb Jaisi, Ph.D., Newark, DE
Pujan Joshi, Storrs, CT (Website/IT Lead)
Yogendra Jonchhe, Hornell, NY
Upendra L. Karna, P.E., D.Eng. Lambertville, NJ
Kanaihya Kayastha, P.E., S.E., La Habra, CA
Pradeep Khanal, Santa Clara, CA
Prakash, B. Malla, Ph.D., Dublin, GA
Suresh Ojha, MSEE, Santa Clara, CA
Sandeep Pyakurel, Ph.D., P.E., Ashburn, VA
Ananda Paudel, Ph.D, Denver, CO
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Niley Shrestha, Oakland, CA
Rajendra Shrestha, Ph.D., Houston, TX
Rajendra Shrestha, P.E., Pearland, TX
Rakam Lama Tamang, Longhorne, PA

Local Committee

Rajendra Shrestha, P.E. (*Chair*), Pearland, TX
Subash Paudel, P. E. (*Co-Chair/ Program coordinator*),
Cypress, TX
Bijay Aryal, P.E. Katy, TX
Ripendra Awal, Ph.D., P.E., Cypress, TX

Local Committee (Cont'd..)

Sanjaya Basnet, P. E., Houston, TX
 Dipesh Dawadi, Houston, TX
 Ajay Dhakal, Pearland, TX
 Badri Gautam, Katy, TX
 Pradeep Gautam, P. E., Katy, TX
 Jagannath Ghimire, P. E., Katy, TX
 Umesh KC, P. E., Pearland, TX
 Rameswor Kunwar, Pearland, TX
 Damodar Pangyani, P. E., Katy, TX
 Bibek Sapkota, Cypress, TX
 Prabin Shrestha, Katy, TX
 Rajendra K. Shrestha, Ph. D., Houston, TX
 Raju Subedi, P. E., Katy, TX
 Sushil Subedi, Little Rock, AR
 Janak Thapa, P. E., Katy, TX
 Satish Tripathi, Houston, TX
 Govind Upadhyay, P. E., Pearland, TX

Local Sub-committees

Cultural Program

Janak Thapa, P. E., Katy, TX (Coordinator)
 Subash Paudel, P.E., Cypress, TX
 Badri Gautam, Katy, TX

Food and Beverage

Govind Upadhyay, P. E., Pearland, TX (Coordinator)
 Bibek Sapkota, Cypress, TX
 Raju Subedi, P. E., Katy, TX

Fund Raising/Sponsorship

Pradeep Gautam, P. E., Katy, TX (Coordinator)
 Jagannath Ghimire, P. E., Katy, TX
 Prabin Shrestha, Katy, TX

Outreach & Promotion

Ajay Dhakal, Pearland, TX (Coordinator)
 Rameswor Kunwar, Pearland, TX

Public Relation/Registration

Damodar Pangyani, P. E., Katy, TX (Coordinator)
 Dipesh Dawadi, Houston, TX
 Ripendra Awal, P.E., Ph. D. Cypress, TX
 Umesh KC, P. E., Pearland, TX

American Society of Nepalese Engineers (ASNEngr) is a non-profit organization established in September 2007 with IRS 501(c) (3) tax exempt status – aims at providing a common platform for people of Nepalese background and their friends, in engineering and closely related scientific and technical areas to come together, exchange ideas, and support each other for their and the larger society’s common good and benefits. It operates for engineering, scientific and technological research and educational purposes. The Society also strives at promoting engineering, scientific, and technological advancement in Nepal. The Membership application form and detailed information on ASNEngr and updates on its recent activities can be found at <http://www.ASNEngr.org>.

Computer Association of Nepal-USA (CAN-USA) is an American organization dedicated to the professional development of its members and technological progress of Nepal. It is a tax exempt 501(c) (3) non-profit organization with members throughout the United States. The organization continues to utilize the creativity and talent of its members and the broader American community to develop technology-rich solutions that address some of Nepal's challenges. Please visit <http://www.can-usa.org/> for more information.

Conference Websites

For more information on the conference, please visit the following websites:

www.ASNEngr.org (“Annual Conferences and Meetings”) and
www.CAN-USA.org (“2016 Joint Conference”)

