
ACE RESOURCES

A newsletter for the Association
of Conservation Engineers

FEBRUARY 2017

Enhancing our
Natural Resources

INSIDE THIS ISSUE:

2017 CALL FOR PAPERS

2

2016 AWARDS

3-4

2016 CONFERENCE PHOTOS

5

PRESIDENT'S MESSAGE

6

ACE NEWS

7

2017 ACE CONFERENCE
SAVE THE DATE

8

24TH ANNUAL CARL ANDERSON
CONSERVATION ENGINEERING
PROJECT AWARDS COMPETITION

9-14

JAMES (JIM) SCHALK MEMORIAL
SCHOLARSHIP

15-16

Tom Hohman is 2016 Baker Award Recipient

See page 6



Call for Papers!

The Association of Conservation Engineers invites all persons interested in the engineering practices of fish, wildlife, and recreation development to respond to this Call for Papers for presentation at the ACE 56th Annual Conference. The Conference will be held September 15-19, 2017 in Ogden, UT. Engineers, architects, designers, technicians, consultants, industry representatives and others in the field of conservation engineering are invited to submit abstracts. Conference presentations are scheduled for 30 minutes each, with longer presentations available. Please contact Natalie Little at nlittle@fs.fed.us by April 14, 2017 if you would like more information about giving a presentation or if you are interested in presenting at the Conference.

Committee Members

2016 - 2017

EXECUTIVE COMMITTEE

Holly Bentz, OR
President

Natalie Little, UT
President Elect

Terra McParland, IL
Secretary

Howard Thomas, MO
Treasurer

Joel Krause, OR
Past President

Dale Gunter, AR
Past President

David Bumann, WY
At-Large Member

Linda Logan, MO
At-Large Member

Awards

Breagan Eicher, IN – Chair
Linda Logan, MO
Holly Bentz, WA
Alice Anderson, TX

Bylaws

Linc Cochran, IL - Chair
Greg Mihalevich, MO
Dave Bumann, WY
Norval Olson, CO

History

Terry Boyd, AL – Chair
Norval Olson, CO
Linc Cochran, IL
Holly Bentz, WA

Membership

Stephen Romero, CA - Chair
Gary Wilken, IL
Jeff Leftwich, MO
Matt Cochran, IL
Tom Hohman, IN

Nominating Committee

Norval Olson, CO - Chair
Gary Wilken, IL
Breagan Eicher, IN

Operations Manual

Randy Knott, GA – Chair
Tom Hohman, IN
Breagan Eicher, IN
Dale Parsons, MO

Past Presidents Committee

Dale Gunter, AR – Chair
Joel Krause, MT
Breagan Eicher, IN

Program

Natalie Little, UT - Chair
Terra McParland, IL
Holly Bentz, OR

Publications/Newsletter

Norval Olson, CO- Chair
Colter Pence, MT
Bo Vandergriff, OK
Dale Gunter, AR

Scholarship

Champak Patel, IN – Chair
Joel Krause, MT
Erica Davis, AL
Terra McParland, IL

Special Communications / Social Media

Norval Olson, CO - Chair
Matt Cochran, IL
Darin Martens, WY

Spouse Advisory

Jean Olson, CO
Abby Eicher, IN

Time and Place

Bo Vandergriff, OK - Chair
Dale Gunter, AR
Norval Olson, CO
Joel Krause, OR

2016 Carl Anderson Awards

The purpose of the Carl Anderson Conservation Engineering Project Awards competition is to give recognition to those members, consultants and/or their departments whose work, as judged by their peers and associates, best exhibits the

goals and objectives of The Association of Conservation Engineers.

Two applications for the Carl Anderson Award were received this year: the Hume Lake Dam rehabilitation and the Restoration of the Stone Tower at Fort

Mountain State Park. Both projects are excellent examples of engineering maintaining and improving access and enjoyment of the natural world. The Hume Lake Dam project received the Award of Excellence, with the Award of Merit given to the Restoration of the Stone Tower at Fort Mountain State Park project.

Award of Excellence Winner

Hume Lake Dam Rehabilitation Project



Hume Lake Dam after rehabilitation. Inset: Photo of the dam taken in the early 1900s when the lumber mills was in full operation.

Designed and constructed by John Eastwood in 1908, Hume Lake Dam is the first multi-arch reinforced concrete dam in the world. Its original purpose was as a log pond and water source for a 17 mile flume used to transport timber downstream. Hume Lake Dam has been rehabilitated twice before by the Forest Service – in the 1950s and early 1980s.

The latest effort began in 2010 when the primary outlet works were upgraded. Then in 2014-2015 inspections revealed a substantial increase in foundation seepage and corrosion of the internal reinforcement in the West side of the dam. It was felt that changed lake conditions caused by the ongoing drought may be contributing to observed deficiencies. Worried about the long term viability of the dam, the Forest Service proceeded with a \$3 million upgrade to the dam structure that was intended to significantly reduce

seepage through and under the dam, which included:

1. Installation of a waterproof membrane on the upstream face to reduce seepage through the dam structure
2. A substantial foundation grouting program on the west side to reduce seepage through the dam foundation
3. Structural evaluation of the entire dam to include infrared void detection, echo impact testing, coring, and a terrestrial lidar stress/strain deformation survey.
4. Placement of low permeability controlled density fill along the upstream dam toe to improve structural foundation capacity and reduce seepage through weathered bedrock.
5. Installation of a cathodic corrosion protection system on the outlet works to extend its service life
6. Installation of a new high capacity logboom.

The work on items 1 through 4 was completed in March of 2016 and appears to have accomplished the intended objective. Work on items 5 and 6, which are modifications, will be completed in the Fall of 2016. Future work includes a 3 dimensional seismic evaluation using parameters derived from the terrestrial lidar deformation survey, installation of a SCADA system which will allow remote control and monitoring of the dam, and the installation of a microhydro unit intended to power a nearby fire station but will also likely improve downstream fisheries by increasing minimum flows from 10 cfs to approximately 20 cfs.

Project Submitted by:
USDA Forest Service
Pacific Southwest Region

Project Location:
Sequoia National Forest
Fresno County, California

2016 Carl Anderson Awards

Award of Merit Winner

Restoration of the Stone Tower

The historic Fort Mountain State Park Fire Tower is an outstanding example of the finely crafted fire towers built by the Civilian Conservation Corps in the 1930s. The tower was severely damaged by a fire in the early 1970s and the stone foundation stood as a ruin for over 40 years. The project restored the tower to its original appearance and now allows visitors to experience the architectural distinction as well as the fire-fighting purposefulness of the tower.



Photos from the left: Historic photo, Pre-restoration photo, and Restored Tower photo.

The restoration was facilitated through the use of historic photographs that showed the upper level heavy timber structure that was destroyed by the fire. The photos allowed replication of the pyramidal wood shake roof with its gentle curve at the eave and decorative copper element at the peak. The proportion and configuration of the original casement windows and the wood panels was carefully replicated. Wood plank doors and casement windows were constructed to fit the original masonry openings. The exterior stair was reconstructed turning the corner of the stone foundation and providing an overhang above the entry door at grade. The grade level interior room retains its original stone floor and new windows were installed at the existing masonry openings. The new wood structure's dark stain matches the original appearance in the historic photos.

Original structural ties remained embedded in the stone at the top of

the tower and gave clues into how the original upper heavy timber structure was anchored. The new heavy timber design was configured in a manner similar to the original structure while also being engineered to meet current codes.

Original ties and structural markings on the interior stone walls gave some indication of the configuration of the original interior stair. The new stair is actually a structural steel stair that has been clad in wood to give the appearance of the original stair. The stair newel and picket design is similar to other CCC fire towers constructed in the region at the same time. Historic research revealed numerous photos of the interior upper level of fire towers in use.

The site has been enhanced with a distinct and separate small circular stone plaza with low wall seating. The stone for the plaza was gathered from the mountain just

like the stone for the tower was gathered in the 1930s. The new low wall stone cap is patterned slightly differently to assure that the new stone plaza area looks distinct from the stone on the historic tower. Fully restored, the Fort Mountain Fire Tower again exhibits the architectural character of a wellcrafted Civilian Conservation Corps structure and contributes to the legacy of twentieth-century efforts to fight forest fires. The restored tower is a testament to how engineering solutions played a critical role in the formative years of conservation and natural resources management.

Submitted by:
Freedman Engineering Group

Project Location:
Fort Mountain State Park
Chatsworth, GA

2016 ACE Conference in Pictures



Attendees of the 2016 ACE Conference



Gavel hand-off to 2016-2017 ACE President Holly Bentz



2016 Conference Host Tyrone Kelly, USDA Forest Service



Presentation of the 2016 Carl Anderson Award



2016 ACE Conference Thursday Field Trip Group



Dimas Technology and Development Center Demonstration, USDA Forest Service

“Like” ACE on Facebook!

President’s Message

HOLLY BENTZ, PE

It is hard to believe that already four months have passed since we gathered for our last conference in beautiful Claremont, California. Thank you to Tyrone Kelley, Director of Engineering for the Southwest Region of the Forest Service, for leading the charge on the conference and providing us with an action-packed agenda of speakers and field tours. The discussion on some of the current trends like summer recreation opportunities and mass transit and how these are impacting our natural resources were very educational.

At the banquet, we also thanked Dale Gunter for his year of service as President, and enjoyed presenting Tom Hohman from Indiana with the Eugene Baker Award for sustained service to conservation engineering.

As an executive board we have recently contracted with Meetings Northwest to take over management of our membership roster. They will be updating the website sometime soon with a link that will allow payment of membership dues electronically. In addition, they will also begin to email reminder notices for dues payment. We are excited about this next step in making our organization more efficient. A huge thank you to Howard Thomas, ACE Treasurer, for making this happen, and to Natalie Little and Terra McParland for getting the membership roster updated and sent off to Meetings Northwest.

We are starting to gear up for our 56th annual conference, which will be held in Ogden, Utah on October 15-19, 2017. I believe speaker slots are still available so if you have a great topic please contact Natalie Little at nlittle@fs.fed.us. More info coming soon.

Additionally information will be coming in the next newsletter regarding Carl V. Anderson Awards and Scholarships. Be thinking about those recent projects so you can get them nominated. It is a great opportunity to showcase your hard work.

Looking forward to seeing you all in Utah and remember to like us on Facebook! <https://www.facebook.com/conservationengineers/>

Holly A Bentz, PE
President

A little about the 2016 Baker Award Winner

Tom Hohman is the latest recipient of the Eugene Baker Award.

This award was established in honor of Eugene Baker, founder of the Association. According to the Baker Award description in ACE’s Bylaws, “It may be awarded annually to one individual who has made a significant and outstanding contribution in the field of conservation engineering. The recipient need not be an engineer or member of the Association, but must be unmistakably identified with conservation engineering and in keeping with the Association objectives.”



Tom has been a member of ACE since 1995. He served as President of ACE in 2004-2005. A registered professional engineer, Tom retired from the Indiana Department of Natural Resources in 2012. He worked at IDNR for 38 years, and for the last 16 of those years, was the Director of the Division of Engineering.

Tom is a graduate of Purdue University with a bachelor of science in civil engineering, and of Butler University with a master’s in business administration.

He has been active in conservation work in Indiana. He is a past president of the Indiana Native Plant and Wildflower Society and is currently president of the Indiana Parks Alliance. The Indiana Parks Alliance is a newly formed organization that is an advocate for and supporter of Indiana’s state parks and state owned nature preserves.

ACE gets exposure in local press

September 25-29th was the 55th Annual Conference for the Association of Conservation Engineers, held in Claremont, California. This group (ACE) is a national group of state, federal, and consulting engineers who work for park and wildlife agencies including the USDA Forest Service. Related vendors are also members.

Mr. Norval Olson, local Coal Creek Canyon resident and active Saws & Slaws sawyer, swamper, firewood volunteer, and apple pie baker extraordinaire, has been active in ACE for over 20 years and thought a presentation on Saws and Slaws (S&S) would be good for this year's conference which was hosted by the USDA Forest Service Pacific Southwest Region. Presentations at ACE are normally somewhat technical and related to recent projects but Norval thought that S&S would also be of interest.

Attendees at this conference came from Arkansas, Illinois, Indiana, Washington D.C., Arizona, Utah, California, Wyoming and more. Talk subjects ranged from Dam Rehabilitation and Log Cabin Preservation

to Engineering Ethics and Trends in Fish Hatchery Design. It's the diversity of work and projects that make the group unique.

Norval started his presentation by telling attendees that he needed to "put my uniform on first." He explained how Saws and Slaws volunteers with 20 or more volunteer hours are presented a bright orange long-sleeve logo t-shirt with the member's name on the back and this is what he put on. He began the PowerPoint slides by indicating what was behind S&S: saws or chainsaws for cutting trees and slaws for the pot-luck lunch after the work is done. He explained that community members with different needs and talents work together as a team, operating more efficiently and effectively than individuals working alone with the overall goal of mitigating private property in the "WUI" (Wildland-Urban Interface) by thinning the forest around residential homes to help protect from wildfire. He showed dramatic photos of our recent Cold Springs fire which demonstrated to the audience that fire mitigation really does help to protect homes.

It was mentioned how S&S received the 2015 Wildfire Mitigation Innovation Award from the National Fire Protection Association, the International Association of Fire Chiefs and others. The most important part was to point out that Saws & Slaws is about building community and was born out of Cesar Gellido's dream - not everyone is an organizer, not everyone owns a chainsaw, and not everyone knows how to make apple pie (Norval is starting to get a reputation for the apple pie baking at the S&S pot lucks). Together, by combining diverse talent, everyone can make a difference.

Saws and Slaws hopes that with increasing regional and national recognition, similar initiatives will be established in new geographic areas, including other states. The interest and response regarding Saws and Slaws at the ACE conference was great. Norval received a lead for possible grant monies in order to continue and further the great work that S&S does.

Reprinted from the November, 2016; The Coal Creek Canyon Mountain Messenger

Members invited to 2017 Fish Passage Conference in Oregon

Fish Passage 2017 will be held at Oregon State University in Corvallis, Oregon (USA) on June 19-21, 2017. This three-day conference will begin each day with plenary and panel discussions prior to concurrent sessions and will feature ample professional networking opportunities, access to poster sessions and exhibitors. In addition, pre-conference short courses and post-conference tours are now available.

More information, including conference and sponsorship registration, can be found at: www.fishpassageconference.com

Thank you. We look forward to seeing you at the conference!

**The Organizing Committee
of Fish Passage 2017**



WANTED

ACE Newsletter Editor

ACE is looking for a someone to produce this newsletter. The publication, now being sent to members via email, is produced two to three times a year. It features items of interest to ACE members: conference news, awards and scholarship news, projects of interest, and in general, anything that is of interest to members. For the past 20 years or so, Lynda Cliburn in Springfield, Illinois, has published the newsletter. While she puts the document together using Adobe InDesign, she said it can just as easily been done as a Microsoft Word document. And now that the decision has been made to only send the newsletter via email, it is easier than ever to produce. The new Editor won't have to worry about printing and mailing! Lynda is ready to turn the ACE Newsletter over to someone new. If you are that someone, please contact ACE's Publication/Newsletter Chair, Norval Olson at NOJO5CO@msn.com.

*56th
Annual
Conference*

ACE
ASSOCIATION OF
CONSERVATION
ENGINEERS



Technology and Development: Continuing Education

 *Energy*  *Transportation*  *Water*  *Recreation*

Save the DATE!
October 15th - 19th 2017



*Location:
Marriott Courtyard
247 24th Street
Ogden, Utah*

*For more info visit:
conservationengineers.org*



Purpose

The purpose of the Carl Anderson Conservation Engineering Project Awards competition is to give recognition to those members, consultants and/or their departments whose work, as judged by their peers and associates, best exhibits the goals and objectives of The Association of Conservation Engineers.

Categories

Project Category A - STUDIES / RESEARCH PROGRAMS

Non-design services including, but not limited to: Pilot/experimental projects; bioengineering; electrical heating; new products and materials; basic research on new technology; fuels and water; properties and uses of fuels; research in natural resources; hazardous waste studies; resource recovery; environmental impact studies; soils and other subsurface geotechnical investigation and evaluation; damage correction; computer services; technical papers. All of the entries in Category A are involved with non-construction document design services.

Project Category B - CONSERVATION / ENVIRONMENTAL

Dams (water supply, irrigation, flood control, recreational) Fisheries management, Parks and Wildlife facilities, Energy generation, transmission, distribution, conversion, conservation and storage-mitigation, Drainage systems, Incineration, Mine Reclamation, Resource recovery, Waste treatment facilities, Water resources and supply, Wetlands treatment.

Project Category C - SPECIAL PROJECTS

Any project that does not fit into other categories including, but not limited to: Erosion protection and control Recreational-theme parks, zoos, marinas, aquariums, Site development, Structure of buildings, Historical restoration, and Construction projects resulting from unique studies or research of the type in Category A.

Eligibility

Entrant:

Any governmental agency or department, or its selected consultant, engaged in the fields of recreation, wildlife preservation, tourism and/or conservation of the natural environment that is a member of or has made application for membership in the ACE is eligible for participation in this awards program.

Project:

1. The project entered must be the completed work of the governmental agency or department making the submission.
2. Up to two project entries may be submitted by each participant.
3. The project must have been completed within the **24 months** preceding its submittal.
4. The project must have written permission from the owner for entry into the competition and future publication.



Entry

Making your submittal for the ACE Conservation Project Engineering Award is a simple two-step process:

FIRST: Send your Declaration of Intent to submit by fax, email or mail postmarked no later than Friday, **May 19, 2017**.

SECOND: Prepare your Entry packet. Entries must be postmarked no later than Midnight Eastern, Friday, **June 16, 2016**.

The entry Packet shall include the following:

1. A copy of the ACE Declaration of Intent form as previously submitted.
2. Letter from the agency or owner giving written permission allowing for publication of any feature or innovation found to be of interest to the members of the Association.
3. ACE Data Sheet 1 (attached).
4. ACE Data Sheet 2 (attached).
5. Drawings; up to a maximum of 4 sheets as needed to delineate project.
6. Colored photographs (a maximum of six) may be utilized to complement the written description.

Note: *If submittal is larger than 10 MB, then the entry can be submitted on a CD to the Committee Chair.*

Winners will be notified to prepare a Project Panel to bring for display and presentation at the ACE 56th Annual Conference in Ogden, Utah, October 15-19, 2017.

Winner Project Panel

To be completed before the 2017 Conference

A project panel is required of those winning entries receiving an Award of Excellence or an Award of Merit, and is requested, but optional, from the winner of the Award of Honor. The project panels are on display during the Conference for viewing by all in attendance. Project panels are returned to their owner at the end of the conference.

Submit to:

ACE Committee Chairman—Breagan Eicher
Civil Engineer, Lawson-Fisher Associates
525 West Washington Avenue
South Bend, IN 46601
PH# (574) 234-3167
Fax# (874) 236-1330
beicher@lawson-fisher.com

Note: The entry fee for the 2017 awards competition has been waived. No entry fee will be required.

Project panels are restricted to one 30" x 40" heavy weight crescent or mat board, or two 20" x 30" boards hinged and capable of standing on an easel. Material displayed shall be B/W or colored photos, printed texts and/or drawings which best describe the features of the entry. Project panels shall be identified with the name of the submitting department or agency, the name of the project and its location.



Judging

The judging panel shall consist of not less than three nor more than five judges. All judges will be qualified design professionals such as engineers, architects, biologists, botanists or others involved in the conservation or environmental field. At least two of the judges will be a member of ACE. The judges will be selected by the Awards Committee and may reside in the state

hosting the conference. The judges will meet soon after the submission deadline to evaluate and select the projects to receive awards. The judges' decision shall be final.

None of the judges may submit entries nor be identified with any submitted entry.

Definitions of Ratings Guidelines

1. Originality / Innovation / New Application of Existing Techniques:

- Does the entry represent any new branch of conservation engineering or some type of breakthrough in general knowledge of our environment?
- Does the entry represent a unique mix of different techniques, materials or equipment?

2. Technical value to the Conservation Engineering Profession:

- Does the entry advance the state of the conservation engineers' art?

3. Complexity:

- Does the entry involve very complex criteria or types of problems to be addressed?
- Were extraordinary problems of site, location, hazardous conditions, project requirements, or similar elements present?
- Does the entry require out-of-the-ordinary technology and ingenuity for achievement?

4. Meeting and Exceeding Owner's Needs:

- Is it an economical and cost-effective solution?
- How did final cost relate to original budget estimate?
- How closely does the entrant's solution meet the total goals of the owner?
- Does the entry meet and justify its original concept?
- Did the entrant meet the owner's time schedule?

5. Natural Resources and Environmental Considerations:

- Does the entrant's solution bring into play an improved program, i.e., are additional benefits realized as a spin-off?
- Does the entrant's role provide society with any useful advancement in the area of conservation and environmental sciences?
- Is the public health, safety, or welfare enhanced as a result of the entrant's role in the project

Awards

The jury shall make awards to three meritorious entries. At the discretion of the jury, the number of awards may be limited or expanded. The following awards will be issued:

- Award of Excellence.....Special Award
- Award of Merit..... Plaque
- Award of Honor.....Plaque

A certificate of participation may be presented to all other qualified entries. From time to time a letter of recognition or certificate may be awarded to other entries as the judges may recommend.

Awards will be presented during the Awards Banquet at the ACE 56th Annual Conference in Ogden, Utah, October 15-19, 2017.



For use of award chairperson only

PROJECT REG. NO. _____

Received _____

DECLARATION OF INTENT TO SUBMIT FOR ACE CONSERVATION PROJECT ENGINEERING AWARDS

*(This page is due by fax email or postmarked on or before **Friday, May 19, 2017**)*

Date submitted: _____

Note: Please furnish all information requested below for each entry. If additional forms are required, copy this format.

I intend to submit an entry to the Association of Conservation Engineers Design Awards Program in the following category and division designated.

Category (*Check One*)

- A. Studies/Research Program _____
- B. Conservation/Environmental _____
- C. Special Projects _____

Budget Cost of Project: _____ Scheduled Completion: _____

Actual Cost of Project: _____ Actual Completion: _____

Name of Submitting Entity: _____

Address: _____

Contact Name: _____ Phone No: (_____) _____

E-mail: _____ Fax No: (_____) _____

Name of Project: _____

Location: _____

Owner's Name: _____

Note: Remember to get Owner's approval for use of project award nomination

Name of Consultant(s): _____

(if applicable) May be the same as submitting entity

Note: The submitting entity or the owner of the project must be a member of the ACE organization or must have made application for membership at the time the Declaration of Intent is filed.



For use of award chairperson only

PROJECT REG. NO. _____

Received _____

ACE 2017 DESIGN AWARDS DATA SHEET #1

*(This page is due by fax, email or postmarked on or before **Friday, June 16, 2017**)*

PROJECT NAME: _____

1. Agency / Firm Making Submittal: _____

2. Address: _____

3. Contact Name: _____ Contact Phone No: _____

E-mail: _____ Fax No: _____

4. Project Location: _____

5. Project Category: _____

6. Outside Consultant(s): _____

7. If a winning entry, please give exact Project Information as it should appear on the plaque or certificate:

Name of Project: _____

Project Owner &/or
Consultants: _____

Project Location: _____



For use of award chairperson only

PROJECT REG. NO. _____

Received _____

ACE 2017 DESIGN AWARDS DATA SHEET #2

*(This page is due by fax, email or postmarked on or before **Friday, June 16, 2017**)*

PROJECT NAME: _____

In approximately 500 words (total), write a short summary of the project features and solutions that best answer the following rating guidelines:

Note: *The unnecessary use of names of agencies, departments, consultants or individuals should be avoided. The name of the submitter(s) is removed prior to project review, so that the panel of judges may consider projects based on solely on merit.*

- | | |
|---|------------|
| 1. Complexity of Program: | 15% |
| 2. Technical Value to Conservation Engineer's Profession: | 15% |
| 3. Originality/Innovation/New Application of Existing Techniques: | 20% |
| 4. Meeting and Exceeding Owner's Needs: | 25% |
| 5. Natural Resources & Environmental Considerations: | <u>25%</u> |
| | 100% |

James (Jim) Schalk Memorial Association of Conservation Engineers Scholarship

Application Requirements

1. The purpose of this program is to promote the Association of Conservation Engineers (ACE) and the continued study and learning required for the conservation of our natural and renewable resources in the areas of preservation and recreation. The Association of Conservation Engineers (ACE) is an international organization of engineers and allied personnel employed by conservation and natural resource agencies and consultants with specialized interests in the area of fish, wildlife, parks, forests and related conservation/recreation fields. Additional information about ACE can be found on our web site a www.conservationengineers.org.
2. The selection of scholarship nominees shall be according to the following eligibility guidelines:
 - a. The selection shall be restricted to junior and senior students of the undergraduate study program and students of the graduate study program, enrolled in an accredited course of college, directed toward a BS or MS degree in engineering, any of the natural sciences, ecology, or agriculture.
 - b. Students shall carry a full program and be enrolled as a full time student.
 - c. The student shall submit a technical paper of 1250 words maximum but not less than 750 words written in essay form. The paper's topic shall relate to the conservation and/or preservation of natural, cultural or renewable resources.
 - d. A recommendation letter, on university letterhead, from one of the student's instructors shall accompany the submitted technical paper stating the student's qualifications for this scholarship.
3. The monetary value of this scholarship shall be \$1,500.00 (one thousand five hundred dollars) paid directly to the recipient. Presentation of the award shall be mailed to the recipient after the ACE annual conference. It is the discretion of the recipient on how the award shall be used.

rev: 02/2016

James (Jim) Schalk Memorial Association of Conservation Engineers Scholarship

2017 Application Form

Name: _____ Date: _____

Address: _____

Phone Number: _____

E-mail Address: _____

Major: _____

Class (circle one): Junior / Senior of undergraduate study and graduate study

Anticipated Graduation Date: _____

Name of School: _____

Address of School: _____

Send completed Application Form, instructor's letter of recommendation, and written essay to:

Champak N Patel, P.E.
Civil Engineer
3938 S Emerson Ave.
Indianapolis, IN 46203
Or email to: cpatelbg@yahoo.com

Applications must be received no later than August 30, 2017

Winner will be notified by September 28, 2017.