

STRUCTURAL ENGINEERS OF COLORADO NEWSLETTER

2021 SPRING SCHEDULE SIGN UP FOR THESE EVENTS AT

HTTPS:// SEACOLORADO.ORG/

SEAC/CAGE Meeting

January 21, 2021 Via Webex 7:45am-9:00am

Post-Disaster Safety Evaluation of Buildings & Infrastructure

February 7, 2021 Via Webinar 8:00am—4:30pm

Business Management Meeting

February 11, 2021 Via Webex 7:30am

January General Meeting

SEAC January General Meeting with CAGE January 21, 2021 via Webex 7:45am-9am

PRESENTATION: Applications and Design of Floor Slabs Supported Over Ground Improvement

Difficult site conditions such as soft compressible soils and uncontrolled fill deposits are common challenges at today's building construction sites. Removal and replacement of the problem soils typically involves massive over-excavation or requires the construction of deep foundations and structural floor slabs. Both options are costly and time-consuming. However, developments in ground improvement technologies have made it possible to reinforce unsuitable soils in place. With current technologies it is possible to convert building foundations from pile supported structural slabs to conventional foundations with non-structural slabs-on-grade.

Commonly used ground improvement techniques include Rammed Aggregate Pier Systems, vibratory stone columns, and grouted rigid inclusions. These systems can provide economical solutions for the support and settlement control of conventional light to heavily loaded floor slabs in industrial, commercial, and residential applications. The presence of the stiff ground improvement elements, surrounded by the improved matrix soil, results in significantly reduced shear and moment demands as compared to deep foundations. The result is thinner floor slabs that often contain only minimal steel requirements. The structural performance of the floor slabs is often analyzed using Finite Element Analysis techniques, to model slab pressures, ground improvement elements spacings, and soil conditions to optimize slab design and performance.

This presentation addresses the design and application of ground improvement systems for support and settlement control of floor slabs. Case histories are presented.

SPEAKERS:

Aaron J. Gaul, P.E., Principal Engineer, Ground Improvement Engineering Mike W. Jones, P.E., Structural Engineer, Ground Improvement Engineering





Volunteer in 2021

If you would like to become more involved in SEAC, you can join a committee (listed on page 5) by simply contacting the Committee Chair or the SEAC Office at administrator@seacolorado.org. There are many ways to have an impact on your profession, from planning presentations, to outreach, to supporting networking events. Get involved!

PRESIDENT'S MESSAGE

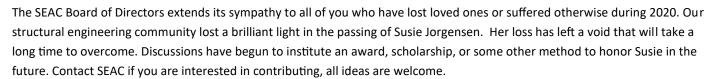
Structural Engineers Association of Colorado

Welcome to 2021!

As difficult a year as 2020 was, it is important to consider what we accomplished. SEAC increased its membership over 2019, successfully transitioned to virtual meetings, launched a YouTube channel, and more. In short, we adapted to new and changing conditions, continued to support each other, learned how to scan QR codes and wear masks (well, most folks mastered mask wearing), all under our Past-President Chad Mitchell's exemplary leadership – thank you Chad.

There is hope and reason to be positive moving forward; with the vaccine coming, soon we will be able to hold in-person meetings again (bacon!). For now, we will continue meeting virtually with a full slate of





After months of isolation, it will be a great pleasure to see all of you face to face, shake hands, share stories, and to discuss projects and milestones. I look forward to this year with optimism and cannot wait to see you all again.

Sincerely,

Lacey goetz

Welcome to our Newest Members

Jessie Berndsen
Martin|Martin
Affiliate Member

David Harris
Integral Engineering Co.
Professional Member

Abby Severyn
Martin|Martin
Affiliate Member

Emily Tran
Fortis Structural
Affiliate Member

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We Want to Hear from YOU! The SEAC Board of Directors is interested in hearing your suggestions, comments, and ideas. Please feel free to contact a member of the BOD at any time.

Thank you to all of our members who continue to support SEAC!

ANNOUNCEMENTS

Structural Engineers Association of Colorado

Membership Renewals

Renew your membership online by January 31st in order to maintain access to all of your membership benefits such as:

- 20% Discount on 80+ publications including the 2018 IBC, ASCE 7-16, 2015 NDS, and ACI 318-14.
- Discounted prices for NCSEA Webinars and SE Exam Review Course.
- STRUCTURE magazine subscription
- Structural Connection subscription
- SEAC Newsletter with structural engineering position advertisements, industry developments, and notification of upcoming events such as Young Member Group Happy Hours, Project Presentations, Job Site and Plant Tours, Breakfast Meetings, and Seminars.
- Free live web broadcast of general meetings for out-of-area members.
- Access to recordings of past general meeting presentations.
- Bimonthly breakfast meetings with an opportunity to earn PDHs and network within our industry.
- Discounted prices for the Fall Seminar and Annual Dinner.
- Opportunity to participate in technical and professional committees that shape our profession on topics from code development to business management.

If you have not received a dues notice, need to correct your local or out-of-area status, or want to upgrade your membership type, please contact SEAC at administrator@seacolorado.org.

SEAC COMMITTEES

Structural Engineers Association of Colorado

Have you considered joining a committee?

Your participation is what makes our organization so successful.

Committee	Chairperson	Contact Phone	Board Liaison
ВІМ	TBD	TBD	Chad Mitchell
Building Dept. Liaison	TBD	TBD	Chad Mitchell
Business Management	Paul Doak Tom Soell	(303) 399-5154 (303) 444-1951	Lacey Goetz
Construction Industry	TBD	TBD	Jeff Borger
Denver Building Dept.	Jerry Maly	(303) 914-4300	Chad Mitchell
Education	Irena Kahanek Michelle Black	720.296.7595 303.860.9021	Holly Janowicz
Ethics	Peter Marxhausen	(303) 947-5375	Lacey Goetz
Existing Structures	Evan Hammel	(303) 860-9021	Brian Lobmeyer
Membership	Matthew Hood	(303) 318-6539	Jeff Borger
Nominating	Jerry Maly	(303) 914-4300	Lacey Goetz
Northern Colorado	Greg Black	(970) 685-4152	Lacey Goetz
Southern Colorado	TBD	TBD	Chad Mitchell
Western Slope	Sara Mickus	(970) 618-7708	Mike Piper
Precast Concrete	Trevor Kirkley	(303) 298-1900	Kim Olson
SEER	TBD Mike Piper	TBD (303) 431-6100	Mike Piper
Scholarship	Jeannette Torrents	(303) 444-1951	Kim Olson
Seismic Standards	Rob Jackson	(303) 843-2850	Jeff Borger
Snow Loads	Jeannette Torrents	(303) 444-1951	Brian Lobmeyer
Standard of Practice	Jim Ness	(303) 623-4927	Chad Mitchell
Steel Materials	Sylvia Iverson Eric Sobel	(303) 757-6323	Kim Olson
Wind Loads	Dale Jones	(970) 568-2919	Jeff Borger
Young Members	Katie Courtright Tom Ladd	303.399.5154 720.544.5431	Holly Janowicz

COMMITTEE NEWS

Structural Engineers Association of Colorado

EDUCATION COMMITTEE

Virtual SE/PE Study Group Kick-Off Meeting- Wednesday, January 20th

- Are you planning on taking the PE or SE exam this January or April?
- Want to increase your chances of passing and learn about helpful tips/ tricks for taking the exam?
- Are you looking for a study group or a group to take a review course with?
- Are you a PE or SE and interested in a refresher course or assisting with the study group?

The SEAC Education Committee would like to invite you to a virtual get together on Wednesday, January 20th at 6 PM.

This kick-off meeting is to assess the interest in possible study groups and review courses for both the PE and SE exams. It is our hope that we can facilitate study groups and accommodate groups for online review courses at discounted rates.

If you are interested in increasing your chances of passing your upcoming professional licensing exam, please join us!

This opportunity is being extended to SEAC members and non-members so please feel free to distribute this to your colleagues and encourage them to join. If you have any questions, please contact the SEAC Education Committee at EducationSEAC@gmail.com

Please RSVP in this spreadsheet/ link below- by end of day on Monday, January 18th:

https://docs.google.com/spreadsheets/d/1q7TIL0GuE1Kq44AmcsRNQm0gR-MGoQMbw6O5Huvi 44/edit?usp=sharing

We will send a ZOOM meeting link to registered participants.

Refer for additional exam information at the NCEES website: http://ncees.org/engineering/se/

PE/ SE Bridge Review session

Please mark your calendar for Thursday, March 25, 2021. More details about this event will be posted in the SEAC February E-mail Blast.

The committee is looking for excited and motivated members to join the committee. This is a great time to join and learn more. If you are interested in attending the meeting (with lunch provided), please RSVP at EducationSEAC@gmail.com.

2021 SEAC Fall Seminar

Is your company dealing with repetitive issues during your projects peer reviews?

The SEAC Education Committee would like to hear about these scenarios and address the gaps during the 2021 SEAC Fall Seminar.

Please provide us your suggestions at EducationSEAC@gmail.com by end of January.

2021 CALENDAR OF EVENTS

Structural Engineers Association of Colorado

SEAC Calendar

2021

Important Dates

BOD Meetings - 7:30am at S.A. Miro

Thursday January 7, 2021*

Thursday February 4, 2021*

Thursday March 4, 2021

Thursday April 1, 2021*

Thursday April 1, 2021

Thursday May 6, 2021

Thursday June 3, 2021*

Thursday July 1, 2021

Thursday August 5, 2021*

Thursday September 2, 2021

Thursday October 7, 2021*

Thursday November 4, 2021

December Board Orientation TBD

* notes conference call only

Business Management - 7:30am at Martin | Martin

Thursday February 11, 2021

Thursday April 8, 2021

Thursday June 10, 2021

Thursday August 12, 2021

Thursday October 14, 2021

General/Annual Meetings - 7:30am

Thursday January 21, 2021 via Webex

Thusday March 18, 2021 at TBD

Thusday Waren 10, 2021 at 188

Thursday May 20, 2021 at TBD Thursday July 15, 2021 at TBD

Thursday September 16, 2021 at TBD

Fall Conference TBD

Annual Meeting November 4 at Space Gallery

SEAC Newsletter Deadlines

January issue - December 28th

March issue - February 22nd

May issue - April 26th

July issue - June 28th

September issue - August 30th

November issue - October 25th

SEAC ENews Deadlines

February issue - January 25th

April issue - March 29th

June issue - May 24th

August issue - July 26th

October issue - September 27th

December issue - November 29th

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NCSEA NEWS

Structural Engineers Association of Colorado

Upcoming Webinars:

- January 14th <u>Seismic Design Series</u>: <u>Introduction to the Seismic Design Manual</u>, <u>Provisions in ASCE 7-16 and 2018 IBC, and Wood Diaphragms</u>
- January 21st Seismic Design Series: Concrete Shear Walls and Diaphragm Design
- January 26th Special Inspection and Structural Observation
- January 28th <u>Seismic Design Series</u>: <u>Pile Foundations and Grade Beams</u>
- February 4th Seismic Design Series: Steel Special Moment Frames
- February 9th <u>90 Seismic Ideas in 90 Minutes</u>

2021 SEAC Scholarships

The Structural Engineers Association of Colorado Scholarship Fund, Inc. will award two \$3,000 scholarships to students who will be enrolled full-time in an undergraduate or graduate civil or architectural engineering program in the fall of 2021 with a focus on structural engineering.

Applications can be completed online at https://seacolorado.org/scholarship_opportunities.php

Only US citizens are eligible.

Applications are due by February 14, 2021.

OTHER EVENTS OF INTEREST

Structural Engineers Association of Colorado



University of Colorado Boulder

Post-Disaster Safety Evaluation of Buildings & Infrastructure

ATC-20, ATC-45, and Cal OES SAP Training

Now by webinar Sunday **February 7, 2021** 8:00 AM-4:30 PM



Webinar training session

Colorado experiences earthquakes, floods, tornadoes, and other natural disasters that damage infrastructure and threaten people's safety. The 2013 Colorado floods damaged or destroyed 20,000 homes and 50 highway bridges. Colorado has experienced 7 damaging earthquakes since 1944 with magnitudes of 5.2 to 5.5, and in 1882 experienced a magnitude-6.6 earthquake near Estes Park. Damage from such events can overburden building safety officials and lifeline operators. Colorado is training a corps of volunteers to rapidly assess the safety of buildings and critical infrastructure, speed recovery, and help people quickly and safely return to their homes, offices, and public spaces. The training uses the de facto international standards for post-disaster safety evaluation procedures called Post-Earthquake, Windstorm and Flood Safety Evaluation of Buildings (ATC-20 and ATC-45).

The University of Colorado Boulder is providing training on ATC-20 and ATC-45 to prepare you to assess building and lifeline safety following a disaster. Taught by a University of Colorado structural engineer and certified California Office of Emergency Services Safety Assessment Program (Cal OES SAP) trainer with experience in U.S. and international disasters, you will learn basic engineering principles and standard procedures for post-disaster safety evaluation. You will participate in exercises using real-life examples of earthquake, hurricane, and flood damage from U.S. and abroad.

Webinar training topics

- ATC-20/45 building safety evaluation procedures.
- Cal OES SAP certification for qualified professionals. Attendance is open to all but certification is limited to licensed engineers, architects, engineering geologists, building inspectors, and public-works inspectors; list at https://goo.gl/H2HahX.
- Training examples of damaged buildings from disasters in the U.S. and abroad.
- How do buildings and other infrastructure structurally react to extreme loads?
- Procedures and exercises for wood, masonry, concrete, and steel buildings.
- GREEN, YELLOW, and RED placards, what are they and how do we use them?
- When and how do you perform a safety assessment and post a building?

Training logistics

WHERE: Online via Zoom webinar. Register to get URL & certification procedures. COST & CLASS SIZE: \$20 covers postage for field manuals and donation to ASCE and EERI student chapters. Manuals provided free by FEMA. Limited to 30 people. Course provides optional continuing education units (0.8 CEUs from CU Boulder, \$20 added fee to CU; payment and documentation details provided during class).

TO REGISTER: visit https://sap-cu-feb2021.eventbrite.com

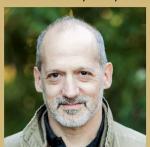
OTHER EVENTS OF INTEREST

Structural Engineers Association of Colorado



Instructor

Keith Porter, P.E., PhD., M.ASCE, F.SEI



Dr. Porter is a licensed California and Colorado professional engineer, a research professor at the University of Colorado Boulder, and principal of the consulting company SPA Risk LLC. He has 30 years of experience in structural engineering practice and university research addressing natural disasters. He led the new *Natural Hazard Mitigation Saves* study for the National Institute of Building Sciences, updating the groundbreaking, Congressionally-mandated 2005 benefit-cost analysis of natural hazard mitigation for 3 federal agencies and 4 private-sector sponsors. He helped to lead the US Geological Survey's ShakeOut, ARkStorm, Tsunami, and HayWired disaster planning scenarios. He has performed post-disaster reconnaissance and data collection after several natural disasters in the U.S. and abroad. He is a certified Cal OES SAP trainer and holds engineering degrees

from UC Davis, UC Berkeley, and Stanford University.

Schedule

8:00-9:30 AM Program overview, process & procedures
10:00-11:30 AM Non-earthquake hazards, building evaluations
1:00-2:30 PM Building evaluations cont., exercises

3:00-4:30 PM Lifelines, field safety

NEWSLETTER ADS

Structural Engineers Association of Colorado



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Consider placing an ad in the bi-monthly SEAC newsletter to reach over 300 members, including professional engineers, suppliers, and vendors.

Contact Kim Wyatt at administrator@seacolorado.org or go online to https://seacolorado.org/seac-shop/.

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> Full Page Ad: \$350 Half Page Ad: \$250 Quarter Page Ad: \$200