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2018-2019 Officers

Top Row from Left to Right: Dila Saidin, Ty Jahn, Mark Rohrbach, Feng Li

Bottom Row from Left to Right: Drew Mason, Brendan Ciotto, Zhangwei Nin, Dustin Taylor

PRESIDENT
Fadzilah (Dila) Saidin, PhD, P.E.
HWA Geosciences Inc.

PRESIDENT-ELECT
Ty Jahn, P.E.
Condon-Johnson & Associates

SECRETARY
Feng Li, PhD, P.E.
Golder Associates

TREASURER
Drew Mason, P.E.
Guy F. Atkinson Construction

MEMBERSHIP CHAIR
Hayward Baker, Inc.

EDUCATION CHAIR
Brendan Ciotto, P.E.
Shannon & Wilson

PUBLIC RELATIONS CHAIR
Dustin Taylor, EIT
Aspect Consulting LLC.

EDUCATION CO-CHAIR
Zhangwei Ning, PhD
Sixense Inc.
President’s Message

Groundhog Day comes every year on February 2nd, so does our newsletter “The Groundhog”. The 2019 issue brings news of completed group activities for the 2018-2019 season, ongoing activities, active committees, and planned future events-including upcoming dinner meetings and the 36th annual spring short course and seminar which will be held on April 26 and 27, 2018.

We are having a phenomenal season largely due to this year’s exceptional officer corps:

- **President Elect, Ty Jahn (Condon-Johnson)** who is coordinating this year’s spring seminar “Excavation Supports and Dewatering”
- **Education Chairs, Brendan Ciotto (Shannon & Wilson) and Zhangwei Ning (Sixense, Inc.)** who worked together to identify and schedule excellent dinner meeting topics and presenters. The good attendance at these events are testimony to the quality of the presentations. The education chairs are also responsible for the spring short course portion of the Spring Seminar which will be held at the Columbia Tower Club on April 26, 2019.
- **Secretary, Feng Li (Golder Associates, Inc.)** put this publication together and keeps our officers on track in preparing our monthly planning meeting minutes.
- **Treasurer, Drew Mason (Guy F. Atkinson Construction),** is the person who checks you in at dinner meetings and who makes sure our finances are in order.
- **Membership Chair, Mark Rohrbach (Hayward Baker, Inc.)** maintains our membership list and acts as a senior level advisor to the board. His past experiences as President of the group is invaluable in guiding our decisions as we move forward.
- **Public Relations Chair, Dustin R. Taylor (Aspect Consulting, LLC.)** has been coordinating our outreach activities with the Young Member Forum (YMF) of the ASCE Seattle Section, the University of Washington Geo-Institute Graduate Students Society (GIGSS), and others. Dustin has also been taking charge of webmaster duties while we go through the process to outsource these services.

2018-2019 season started with a vision meeting at the Shannon & Wilson office attended by members where the new officer corps was elected and confirmed and our vision for the vision for the year discussed. We saw heavier work load faced by the Education Chair in the 2017-2018 season due to additional dinner meeting and short course activities, so we added the Education Co-Chair position to share the duties. Our vision is: “Enhancing collaboration among groups serving our profession by seeking and being responsive to member feedback, maintaining and improving the group’s website and seeking and improving joint activities with affiliated organizations. We also plan to continue improving organization and day-to-day operations of the group to facilitate information sharing and informed decisions based on the current budget and past data.

As a part of our vision planning, we identified areas to focus on: better collaborations with students and academic, update and add membership, outsource the webmaster duties to improve and manage the website and continue having joint activities with related organizations. Some of the plans have been initiated while others are being planned. On collaboration with students and academic: **Mark Rohrbach**, together with **Stan Boyle (Shannon & Wilson)**, another one of our Past Presidents, have had fruitful discussions with University of Washington Professors Steve Kramer and Pedro Arduino, and **GIGSS President Ryan Rasanen**. Action plans have been formulated to be included in future group activities. We are happy to continue our relationship with the GIGSS Chapter. The number of students attending our meetings have been phenomenal and companies sponsoring these students have also risen to the occasion.

(continued on next page)
President’s Message

On joint activities with affiliated organizations: we had a very successful joint dinner meeting with Association of Environmental & Engineering Geologists (AEG) in November with a presentation by Professor Ben Leshchinsky from Oregon State University entitled “Will it Stay or Will it Go? Use of LiDAR to assess Slope Instability. Another joint meeting will be held with ASCE Seattle Section in February with a presentation by Professor Kenichi Soga from UC Berkeley on “Smart Infrastructure and Construction”. We are also planning to have a joint meeting with the Coasts, Oceans, Ports, and Rivers Institute (COPRI). On website management and improvement: a budget of $3000 has been approved to hire a professional to re-design and maintain the website and perform webmaster duties and Dustin Taylor will be the liaison tasked with putting together the scope of work.

Our group continues to support to the UW graduate program through the Robert D. Holtz Endowed Fellowship. Established in 2007 with an initial endowment of $50,000, this fund has grown to just under $300,000 in 2015 through contributions from Dr. Holtz, local firms, and our group. We made a pledge in 2015 to contribute $125,000 within 5 years with matching contribution from UW on meeting the pledge. To date we have contributed $83,000, will contribute another $21,000 this year and are on track to meet the pledge by 2020 to provide the annual funding to the UW program and support geotechnical engineering graduate students. In the photo below, Ben Blanchette (in the background, left), our past President is holding the check to be presented to Janeka Rector (in the background, right) from Student Academic Services, UW. The check was our contribution for 2018. Alex Baird (left) was the 2018 recipient of the Holtz fellowship. Professor Bob Holtz and his wife, Cricket also attended our little ceremony.

Our group continues to grow and thrive, thanks to the dedication of the officer corps and support of each and every member. The board is always looking for volunteers to serve on committees, plan events, and get involved! The number of members interested in helping the board recently is very encouraging, so keep it up. This would make our group even stronger.

Thanks for reading, I look forward to seeing you soon at our monthly dinner meetings and the upcoming Spring Seminar and short course in April. Thank you for your continued support of our group!

Fadzilah (Dila) Saidin
President 2018-2019
An Update from the Membership Chair

In 2018, I audited the Group’s email list and reconnected with more than four dozen “lost” members. Please remember, if you change firms (or retire) your contact information for the group is not automatically updated. The individual must contact the Group and provide the new contact information or update the information directly at http://seattlegeotech.org/membership/.

In addition, to work around the corporate spam filters the Group has identified a smaller list of “champions” who receive special (more directed) emails which seem to pass more easily through the various spam filters. The identified firm champion receives the Group’s email and then forwards the email to other members of the champion’s network. This process has seemed effective. If you are interested in helping the Group by forwarding emails to others within your network, please let me know.

In an effort to strengthen our partnership with the UW, and to increase exposure of undergraduates to what geotechnical engineers contribute to projects, Stan Boyle (Shannon and Wilson) and I met with Steve Kramer (UW) and Pedro Arduino (UW) and Ryan Rasanen (UW – GIGSS). The result of the meeting was an informal agreement that the Group will provide several speakers for the upcoming winter and spring quarters. In general, the presentations will focus on design considerations, interaction of engineers/architects/contractors, and be more general to civil engineering (with a slight geotechnical focus). If you are interested in making such a presentation, please let me know.

On a personal note, over the past roughly 20 years, I have been a board member for the Geotechnical Group for about 10 terms. Participation in the group has been of huge benefit to my professional and technical development; however, at the end of this term the time will have come for me to take a break. I strongly encourage UW students and new geotechnical practitioners (EITs, consulting staff engineers, and contracting field engineers) to get involved with the group. You will be glad you did!

Mark Rohrbach, PE, GE, P.Eng.
Membership Chair
MARohrbach@haywardbaker.com
425-233-7211
# 2018-2019 Events Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Speaker</th>
<th>Topic</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/21/18</td>
<td>DM</td>
<td>Russell A. Green (Virginia Tech)</td>
<td>Region-Specific Probabilistic Liquefaction Hazard Analysis: Overview of the Liquefaction Pilot Study Being Performed in the Netherlands Due to Induced Seismicity</td>
<td>Best Western, Seattle</td>
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<tr>
<td>10/12/18</td>
<td>SC</td>
<td>N. Anderson (Missouri U. of Science and Technology)</td>
<td>Geophysical Methods – What, Where and How to Use for Geotechnical Characterization and Analyses</td>
<td>Columbia Tower Club, Seattle</td>
</tr>
<tr>
<td>10/25/18</td>
<td>DM</td>
<td>Garrett Fountain (TENSAR)</td>
<td>Soil liquefaction solutions: stabilized gravel rafts to reduce liquefaction effects</td>
<td>Red Lion, Bellevue</td>
</tr>
<tr>
<td>11/15/18</td>
<td>Joint DM with AEG</td>
<td>Ben Leschinsky (Oregon State University)</td>
<td>Will it stay or will it go?: use of lidar to assess slope instability</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>1/24/19</td>
<td>DM</td>
<td>José E. Andrade (California Institute of Technology)</td>
<td>Celestial soil mechanics: what would it take to build on mars?</td>
<td>Red Lion, Bellevue</td>
</tr>
<tr>
<td>2/28/19</td>
<td>DM</td>
<td>Kenichi Soga (University of California, Berkeley)</td>
<td>Smart infrastructure and construction</td>
<td>Best Western, Seattle</td>
</tr>
<tr>
<td>4/11/19</td>
<td>Joint DM with GIGSS</td>
<td>Prof. Rudy Bonaparte</td>
<td>2018 Terzaghi Lecture</td>
<td>UW Campus</td>
</tr>
<tr>
<td>4/26/19</td>
<td>SC</td>
<td>TBD</td>
<td>Excavation Support and Dewatering</td>
<td>Columbia Tower Club</td>
</tr>
<tr>
<td>4/27/19</td>
<td>SS</td>
<td>Various</td>
<td>Excavation Support and Dewatering</td>
<td>UW Kane Hall, Seattle</td>
</tr>
<tr>
<td>May 19</td>
<td>DM</td>
<td>TBD</td>
<td>TBD</td>
<td>Best Western, Seattle</td>
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</tbody>
</table>

DM: dinner meeting  SC: short course  SS: spring seminar  TBD: to be determined
The University of Washington’s Geo-Institute Graduate Student Society (GIGSS) mission is to help expose students to the current state of practice of geotechnical engineering and form strong connections with the professional community. This year GIGSS will be achieving this through organizing and hosting the prestigious Hennes Lecture, hosting the regional graduate student symposium, hosting lunch and learns, and attending monthly ASCE dinner meetings and conferences such as Geo-Congress 2019.

**Hennes Lecture**
The Hennes Lecture, which is planned for April 2019, is a yearly lecture where a distinguished speaker in the field of geotechnical engineering gives a presentation in honor of Dr. Robert G. Hennes, founder of one of the first geotechnical programs in the nation at UW. The Hennes lecture is attended by UW students and faculty and the surrounding professional community.

**Graduate Student Symposium**
Every 3-4 years, graduate students from across the PNW attend the graduate student symposium at UW. The symposium encourages the PNW graduate students to share their research, foster collaboration, and discuss the current state of the geotechnical curricula from a graduate student perspective. This year, we also plan to hold a combined poster session where PNW graduate students can interact with the professional community to help both strengthen student relationships and bridge the gap between student and professional life. Please contact GIGSS president Ryan Rasenan at rrasanen@uw.edu if you are interested in participating in the poster session. This year, the graduate student symposium will take place the day after the Hennes Lecture so that the PNW geotechnical community will have a chance to experience both exciting events.

**Lunch and Learns**
GIGSS has been arranging monthly, 1-hour presentations by local and national geotechnical professionals to continue to build upon our foundation of geotechnical knowledge learned at UW. These presentations allow local geotechnical and/or construction firms to meet UW graduate students and share their knowledge about the current state of practice of geotechnical engineering from different professional perspectives. One such presentation was given by Dr. Hong Yang of Mott MacDonald in December 2018 on the Design and Construction of the Downtown Bellevue Tunnel.

**Monthly Seattle GI Chapter ASCE Dinner Meetings**
The UW GIGSS group has also set record attendance by UW students consistently at ASCE dinner meetings from the Autumn 2018 quarter to the present Winter 2019 quarter. Come say hello! We look forward to continuing this trend and meeting the rest of the local professional community.
2018 Spring Short Course and Seminar Update

The ASCE Seattle Geotechnical Group/Seattle Geo-Institute Chapter is proud to announce that our 35th annual Spring Seminar will be held on Saturday, April 27, 2019 on the University of Washington campus at Kane Hall.

This year’s topic is **Excavation Support and Dewatering**. The seminar will cover many types, designs, and aspects of excavation shoring support and dewatering. This topic was selected based on feedback from our members. Planning is underway. A number of regional experts will give presentations on local along with several experts from across the country will give presentations on local projects.

We are pleased to announce a sneak preview of our speakers will include:

- Dave Weatherby, Schnabel Foundations
- Majid Tavakoli, Thompson Pump & Manufacturing
- Youssef Hashash, University of Illinois
- Doug Lindquist, Hart Crower
- Matt Smith, GeoEngineers
- Frank Pita, Frank W Pita Consulting
- Stan Boyle, Shannon & Wilson

Presentations will cover practical design and construction as well as developments in research. We will feature 8 to 9 presentations and a panel discussion.

In addition to the specific topic presentations, the Spring Seminar will include our annual Service Award Presentation, exhibitor displays, and hosted lunch and breaks. Seminar attendees will be eligible to receive 0.8 Continuing Education Units (CEU) or 8 Professional Development Hours (PDH).

We are also planning a 1-day short course which will be held on Friday, April 26, 2019 at the Columbia Tower Club in downtown Seattle. This short course will also focus on Excavation Support and Dewatering.

Volunteers for the Planning Committee are always welcome. Please contact Ty Jahn (TJahn@condon-johnson.com) if you would like to volunteer for the seminar. It is a great way to get involved with the group and the local geotechnical community.

Mark your calendars and make plans to attend the 35th Annual Spring Seminar, look to our website (http://seattlegeotech.org) for more details and to register for the Spring Seminar and Spring Short Course!

Ty Jahn, PE  
President Elect 2018-2019
Local Firm Summaries

The Groundhog is published to inform group members and others of the group’s achievements, recent activities, goals, changes in the group, and other significant issues in the local geotechnical community.

Each local organization represented by the group’s membership is invited to submit a brief article summarizing their organizations services and trends over the past year, plans for the coming year, changes in the organization and promotions.

ASCE Seattle Section Geotechnical Group would like to thank the following firms and organizations for volunteering to submit articles for the 2018 Groundhog publication:

<table>
<thead>
<tr>
<th>Anchor QEA</th>
<th>HWA GeoSciences</th>
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<tr>
<td>Aspect Consulting</td>
<td>Kleinfelder</td>
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<td>Associated Earth Sciences</td>
<td>Landau Associates</td>
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<td>CDM Smith</td>
<td>Malcolm</td>
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<td>Condon-Johnson &amp; Associates</td>
<td>McMillen Jacobs</td>
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<td>C.W. Felice</td>
<td>Seattle Public Utilities</td>
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<tr>
<td>GeoEngineers</td>
<td>Seattle Department of Construction and Inspections (SDCI)</td>
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<td>Geopier Northwest</td>
<td>Shannon &amp; Wilson</td>
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<td>Golder Associates</td>
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<td>GRL Engineers</td>
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<td>Hart Crowser</td>
<td>Terracon Consultants</td>
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<td>Hayward Baker</td>
<td>Wood Group</td>
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<td>Holocene</td>
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Anchor QEA, LLC is an environmental and geotechnical engineering firm with nearly 400 staff creating innovative solutions to meet public and private sector client needs for shoreline development, habitat restoration, contaminated sediment management, water resources, surface and groundwater quality, and upland remediation.

In the past year, our geotechnical group has been busy providing support for Superfund sites, habitat and coastal restoration projects, and shoreline parks in the Pacific Northwest, California, Gulf and Atlantic coasts, New England, and the Great Lakes Region.

2018 marked a milestone in our company’s history as we reached our 20-year anniversary. Over the past 20 years, Anchor QEA has experienced growth and change both internally and in our client base. In the last 3 years, we have welcomed Delta Modeling Associates (California), Altamont Environmental (North Carolina), and Everest International Consultants (California) into our firm to expand our service capabilities.

Additionally, this year will see a big change to our Seattle headquarters as we move from our office of 10 years on Olive Way to our new location on 3rd Avenue (former Washington Mutual Tower) in early February. It will be sad to say goodbye to our view of “Amazon Land,” but we are excited to be closer to Elliott Bay and a view of our beloved Olympic mountain range (and birds-eye view of the much-anticipated Viaduct demolition).

In other news:

- Anchor QEA is in its 20th year of providing scholarships to students in Civil and Environmental disciplines, Environmental Sciences, Landscape Architecture, and Planning and Land Use Management. We awarded a total of $15,000 to six recipients in 2018.

- Company Awards: Engineering News-Record 2018 New England’s Project of the Year, Best Water/Environment, and Excellence in Safety Award of Merit for the Gloucester Gas Light Company former MGP project.

- Anchor QEA’s Seattle office is moving! Our new address effective February 4, 2019, is:
  
  1201 3rd Avenue, Suite 2600
  
  Seattle, WA 98101

We wish all our engineering colleagues a healthy and prosperous 2019.
Aspect Consulting’s geotechnical group had much to celebrate in 2018, with new project challenges, territory, and staff. Henry Haselton, Dave McCormack, and Erik Andersen led our team of strategic advisors supporting clients across the Pacific Northwest.

Leadership: Henry Haselton was voted President-Elect of ASCE’s Seattle Section in June, and he looks forward to learning more about the responsibilities during the transition. He joins Aspect’s other officers Spencer Ambauen (Program Co-Chair), Mari Otto (Host and Hospitality Co-Chair), and Dustin Taylor (Webmaster).

Construction Challenges: Our work brought us to sites with conditions that piqued our professional curiosity. In May, ground broke on Alaska Airlines’ new hub. Aspect provided environmental and geotechnical leadership and collaborated with KPFF on a deep stormwater injection system—the first of its kind in SeaTac. At the Manastash Bridge in Kittitas County, we designed oscillator-installed drilled shafts through boulder-laden alluvium to support the bridge on foundations below design scour depth. We are also overseeing installation of 175 steel pipe piles at Seattle’s historic Pier 62.

Floodplain Restoration: Aspect reached milestones on projects that will mitigate flooding and protect habitat. In King County, we completed geotechnical design on the Lower Russell Road Levee Setback and several tasks along the Green and White Rivers. We also supported design for the Upper Toppendish Creek levee setback in Yakima County and Big Quilcene River restoration in Jefferson County.

New Bend Office + Expanding Oregon Reach: Aspect’s Bend office—our seventh—opened in May, with geotechnical projects underway. Elsewhere in Oregon, we are teamed with Wolf Water Resources on the Middle Fork Hood River Parkdale Fish Hatchery Risk Analysis in Parkdale and the Bethany Lake Berm Stabilization in Portland.

North + West Sound and Central Washington: In August, we celebrated the opening of Waypoint Park on Bellingham’s waterfront, the culmination of 10 years of geo-environmental work at the former Georgia-Pacific Pulp Mill site. Alison Dennison in Bainbridge Island oversaw improvements to Blakely Elementary and started work on the Suzuki residential development that will include dedicated affordable housing. Nick Szot in Wenatchee is supporting the local agricultural industry with design and construction for large controlled-atmosphere fruit storage buildings.

New Faces: Our team hit a growth spurt, adding six new staff: Jasmin Jamal in Portland; Aaron Fitts in Bellingham; Bill Grimm in Bainbridge Island; and Dustin Taylor, Chip Barnett, and another Henry Haselton in Seattle. With their skills and capacity, Aspect is ready for 2019.
Associated Earth Sciences, Inc. (AESI) had a very successful 2018 continuing to focus on providing our diverse client base with geotechnical engineering services. Municipal, K-12 and higher education, mixed-use development, single and multi-family residential projects kept our staff across our Kirkland, Everett and Tacoma offices very busy. On many projects our geotechnical and hydrogeologic groups collaborated to evaluate stormwater infiltration feasibility and strategies for new and redeveloped sites and municipal stormwater retrofit projects.

We attribute part of our success to the addition of highly qualified staff allowing us to better serve our clients. Our new staff include:

- Tim Brown, Associate Hydrogeologist;
- Susan Beckham, Senior Geotechnical Engineer;
- Nicki Shobert, Senior Staff Engineer;
- Kevin Featherstone, Staff Engineer;
- Kelsey McCrady, Staff Geologist;
- Kendra Pivarof-Ward, Staff Geologist;
- Sarah Strozyk, Staff Geologist; and
- Kevin Merriman, Staff Technician.

In June we wished Jim Brisbane, Senior Associate Engineer and Tacoma Office Manager, a happy retirement after celebrating a 30 plus year career in the geotechnical engineering industry. Jim will be spending his free time hiking and traveling with his wife. Congrats Jim!

In January 2019, we relocated our Everett office to Mount Vernon. We are thrilled about this new opportunity to continue to grow and develop relationships with our clients throughout northern Washington.

About AESI

AESI is an employee owned company founded in 1981, providing geotechnical engineering, environmental consulting, hydrogeology, geology, and low impact development support to clients in both the public and private sectors. Our geotechnical engineers, environmental engineers, and hydrogeologists have the interdisciplinary expertise necessary to offer cost-effective solutions for our clients’ projects.
CDM Smith provides lasting and integrated solutions in water, environment, transportation, energy and facilities to public and private clients worldwide. In the Northwest, CDM Smith has offices in Bellevue, Seattle, Portland, Helena, Libby, Kellogg, and Burnaby, B.C.

The close alignment between CDM Smith’s geotechnical and structural engineering technology groups contributed to another successful year where we provided innovative solutions for the design and construction of complex infrastructure projects, including underground construction, foundation, slope stabilization, reservoir, dam, levee, and geo-environmental projects. We contributed presentations to the North American Tunneling Conference 2018 held in Washington, D.C., highlighting some of our tunnel projects.

- **John Newby**, P.E., continues to serve as a program lead and lead geotechnical practitioner for major infrastructure projects in the Western U.S. and Canada, including the Annacis Island WWTP transient mitigation and outfall project in the Vancouver metropolitan area.
- **Dr. Sri Rajah**, Ph.D., P.E., served as lead pipeline engineer, geotechnical design lead, and technical review lead on a high-profile pipeline design project in California, parking garages for Sounder stations, and a new WWTP in Oregon. He is an active member on several technical committees of ASCE, AWWA, and ASTM related to pipeline design and is the chair of the Utility Engineering and Surveying Institute’s new Standards Division.
- **Ulf Gwildis**, L.E.G., provided his expertise in mechanized tunneling, trenchless technology, applied rock mechanics, slope and foundation engineering to several clients in California and in the Pacific Northwest, including Sound Transit, SDOT, SPU and Metro Vancouver. He supported the Heroes Tunnel rehabilitation project in Connecticut and the planned expansion of a mining operation in New Mexico by rock face mapping and analysis of joint systems.
- **Karen Irby-Smith**, managing our geotechnical laboratory in Bellevue, supported geotechnical explorations for Sounder station access improvements in Kent and Auburn and for a planned quarry operation in Idaho. She also completed her FEMA assignment to assist communities in Florida to recover from the 2017 hurricane season.
- **Brendan Miller**, G.I.T., supported our group with geotechnical explorations in Seattle in addition to his work on numerous environmental projects in the Seattle area.
- **Edward Kennedy**, P.E. joined CDM Smith and with more than four decades of experience in high-profile positions in the tunneling industry will support the upcoming construction of the Annacis Island WWTP’s new outfall system.

We continue seeking to add geotechnical professionals to our nation-wide team working on numerous technically exciting and challenging projects throughout the U.S. and beyond.
Condon-Johnson & Associates Inc. (CJA) is a diversified heavy civil engineering construction company whose core competencies include drilled shafts, micropiles, displacement piles, anchored earth retention, dewatering, ground improvement, and structural shotcrete.

In 2018, CJA’s Northwest District added the following key personnel:

- **Travis Johnston** joined CJA as a project manager. He specializes in bringing structural shotcrete solutions to our clients.
- **Rick Hanke** is now CJA’s Director of Ground Improvement. Rick brings over two decades of design and construction experience in multiple ground improvement techniques.
- **Cole Winebrenner** joined CJA as a project engineer bringing heavy civil construction experience from across the country.

2018 Project Highlights:

- Little Pilchuck Creek Fish Passage: CJA was awarded the ground improvement scope of work for this WSDOT fish passage project. Jet grout ground improvement was installed to support a new precast passage structure. All work was successfully completed in tight road closure windows and adjacent to environmentally sensitive wetland areas.
- Alaska Railroad Bridge Replacement: CJA was subcontracted to install foundation elements for the replacement of a 100 year-old railroad bridge south of Fairbanks. The spread footings supporting the existing bridge had been subject to severe scour from the Nenana River. 100’ deep, permanently cased, 7.5’ diameter drilled shafts were installed while the river was still frozen. Reinforcing and concrete placement took place later in the season when temperatures had sufficiently warmed.
- Vigor Berth 309: Vigor shipyards worked with CJA’s Portland office to structurally retrofit one of their berths for increased loading. 200 kip design load, 120’ long micropiles were designed and installed through the low blow count, silty-sand deposits underlying Swan Island. Even with these long elements and relatively high design loads CJA was able to meet the strict deflection criteria of less than ¼ of an inch.

CJA is committed to serving its clients and the engineering community. During the design phase of your next project, please feel free to contact Doug Watt (DWatt@condon-johnson.com) for assistance with conceptual design, feasibility studies, and budget pricing.

If you have questions related to specific techniques, please contact Rick Hanke (rhanke@condon-johnson.com) for grouting/ground improvement, Travis Johnston (tjohnston@condon-johnson.com) for structural shotcrete, or Spark Johnston (SJohnston@condon-johnson.com) for micropiles/barrel vaulting work.

Here’s to a safe and fun 2019!
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C. C. W. FELICE, LLC (CWF) is a veteran-owned small business specializes in delivering geotechnical and construction engineering services to the contracting, design, and owner, communities. Our tunnel, underground and structural foundation experience has been gained internationally in all types of ground conditions. A core competency of CWF is the integration of design and construction services with an appreciation of traditional and alternative project delivery systems. What makes us different is our ability to integrate our understanding of ground conditions and load combinations to deliver cost-effective "constructible" solutions on-time. CWF’s professional services include:

- Construction claim avoidance & mitigation
- Foundation and retaining systems
- Risk analysis & management
- Dispute review board member
- Tunnel & underground structures

In 2018 CWF continued to support the WSDOT I-405 Project Office as a member of the GEC team. This effort has included preparing contract documents for the 2019 award of the Renton to Bellevue ETL project and the preliminary engineering for north end projects along I-405 at 132nd and 85th as well as the lane expansion from SR522 to I5. CWF plans to add additional staff to support the WSDOT projects this coming year.

Other notable activities have included Dr. Conrad W Felice being re-elected as a Trustee for the Deep Foundations Institute, and he delivered a keynote lecture on owners risk on design-build projects at the 8th Conference on Deep Foundation Technologies for Infrastructure Development in India. Conrad also continues to support the local ASCE chapter and serving as the Washington State Advocacy Captain for legislative activities and participated in the ASCE fly-in in March 2018 to meet with the Washington State Senate and House delegations in Washington DC.
2018 was a good year for GeoEngineers’ business in the Puget Sound. The firm ranked 226 in the Engineering News Record (ENR) annual list of the top 500 design firms in the country, despite growing national competition.

2018 Project Highlights

Last year, GeoEngineers performed geotechnical work for many of the largest development and transportation projects in the region:

Development
Tacoma Convention Center Marriot Hotel and mixed-use high-rise
- Intercity transit centers and maintenance facilities
- University of Washington Tacoma and Seattle Campus Development
- Hyatt Regency Hotel
- Point Defiance Triangle Waterfront Phase 2 development
- Skanska’s 2+U 38-story office development in Seattle
- Building Cure, a 13-story research facility for Seattle Children’s Research Institute
- The Washington State Convention Center addition
- The Amazon Rufus 2.0 Campus
- Overlake Hospital’s Project FutureCare in Bellevue

Transportation
- Sound Transit’s Federal Way Extension Project
- Sound Transit’s Lynnwood Link Extension Project
- WSDOT’s Interchange Direct Connecter at I-405 and SR -167
- WSDOT’s Alaska Way Viaduct demolition
- City of Kent S 224th SR 167 overpass interchange
- City of Tacoma’s Puyallup River Bridge
- City of Tumwater’s Trosper Road Redesign

Energy
- PSE’s liquefied natural gas facility in Tacoma
- A multi-year seismic resilience study for Portland General Electric facilities near the Portland Hills Fault
- Tacoma Power’s North 21st Street and Potlatch Transmission Lines over Henderson Bay

Award-Winning Projects

- A GeoEngineers’ Data Gaps and Feasibility Study at the Palermo Wellfield Superfund site received an ACEC Gold Best in State Award in the Client/Owner Satisfaction category.
- GeoEngineers also received an ACEC Bronze Best in State Award for ground improvements and detailed seismic analysis at Puget Sound Energy’s new liquified natural gas facility in Tacoma, Washington.
- The American Association of State Highway and Transportation Officials (AASHTO) gave a GeoEngineers project a President’s Transportation Award in the Environment category. GeoEngineers’ geotechnical team contributed to the winning Big Wood River Bridge project.
- ENR selected the Yesler Way 4th Ave South Bridge project as a Best Project in their Northwest region category. GeoEngineers contributed geotechnical and seismic recommendations for this HDR project in Seattle.

Amazing People

- Senior Geotechnical Engineer Whitney Ciani was recognized by the Notable Women in STEM Project, a list of talented STEM professionals in Washington curated by Washington STEM.
- Geotechnical Engineer Morgan McArthur was promoted to associate.
- This year Woodrow Stokstad, Amy Nguyen, Arash Pirouzi, Clinton Lindgren, Wade Worthing, Sean Hayter and Bo Zhang joined our geotechnical team.

To learn more about our award-winning people and projects, visit www.GeoEngineers.com/groundhog.
We are thankful for the support of the geotechnical engineering community which allowed us to have a great 2018 with continued growth and interesting projects! We were fortunate to be included on many design-build where we could offer value added ground improvement solutions for issues ranging from organic soils to undocumented and contaminated fills to liquefiable soils. Our continued growth is a direct result of geotechnical engineers thinking outside of “the box” in order to come up with innovative and cost effective solutions for their clients.

A special thank you goes out to the following geotechnical firms that included us on their projects: AMEC Earth & Environmental, Associated Earth Sciences, Carlson Geotechnical, Columbia West Engineering, Earth Solutions NW, GRI, GeoDesign, GN Northern, GeoEngineers, GeoResources, Geotech Consultants, GeoTest Services, Golder Associates, Hart Crowser, Kleinfelder, PBS Engineering, PSI, PanGEO Consultants, Robinson Noble, Shannon & Wilson, Strata, Terra Associates, Terracon, URS, and Zipper Geo.

Our growth has been driven by continued increasing awareness of seismic performance of structures and liquefaction hazard by owners. Many of our projects in 2018 included some form of liquefaction mitigation to varying degrees. The patented Geopier-Impact™ displacement system is perfectly suited to mitigate liquefaction hazards and provide foundation support by installing stiff Geopier® elements to depths of up to 50 ft. beneath the water table while creating no spoils and not utilizing air or water jetting during installation!

We have also seen our market for rigid solutions grow. Our offerings include Geopier-Armorpact, grouted Geopier-Impact and GeoConcrete Column rigid inclusions. These systems offer the same benefits of rigid inclusions with the additional benefits of the displacement process and compacted lifts which help improve the surrounding soil and in the case of Geopier-Armorpact, a confining HDPE shell. Many of our projects involving these rigid elements involve penetrating very soft/loose fill soils or organic soils beneath the groundwater.

We are looking forward to teaming with old and new professionals in 2019. Our team continues to expand with the addition of Dan Ciani, P.E. in Boise, ID and Alex Bogue passing the P.E. exam. Cheers to 2018 and we are excited about continued growth and exciting opportunities for ground improvement in 2019! If you would like to discuss potential projects or schedule a Geopier seminar please contact David Van Thiel, P.E., G.E., at dvanthiel@geopiernorthwest.com or (425)646-2995.
GEOPIER IS GROUND IMPROVEMENT®

Delivering cost-effective, reliable, engineered foundation systems

Providing customized solutions for all soil types

Send us your project data
Let our geotechnical engineers customize a solution that meets your needs. Submit your project details to receive a feasibility assessment and cost estimate at geopier.com/feasibilityrequest.

For more information call 800-371-7470. e-mail info@geopier.com or visit geopier.com.

Geopier’s goal is to bring you advanced, innovative ground improvement technology in a way that is easy to use every day. Geopier Rammed Aggregate Pier® and rigid inclusion products enable you to:

- Improve variable fill soils in place
- Replace deep foundations
- Control settlement
- Increase soil bearing capacities
Golder Associates Inc. (Golder) had an excited year filled with new and different opportunities in 2018. Our Pacific Northwest geotechnical group expanded our network of team partners, while delivering on our long-term commitments. Again, Golder’s success and engaging opportunities are because of our great teaming partners and clients. We thank these partners and clients and are grateful for the opportunities to work together.

Some highlights for Golder’s Redmond group include:

- Delivering, with our teaming partners and Sound Transit, on preliminary design, final design, and construction of several Link Extension projects.
- Successful completion of the first design-build project for WSDOT South Central Region
- Continued construction support for WSDOT on the Coleman Dock project.
- Numerical modeling in support of efficient high-rise foundation and shoring designs.
- Cutting edge seismic hazard analyses for multiple high consequence projects in Eastern Canada.

Golder welcomed three geotechnical engineers, Jie Cao, PhD, Balaji Paramasivam, PhD, and Alborz Ghorfrani, PhD. It was also a year for career growth and advancement for:

- Feng Li, PhD, PE Senior Project Engineer
- Jack Perkins, EIT Project Engineer

Golder looks forward to continued growth with unique and rewarding project opportunities, and enhancing our relationships with our industry colleagues. For more information on our projects and active Golder job openings in the Seattle area and elsewhere, visit www.golder.com or call us at (425) 883-0777.
GRL Engineers has 11 offices nationwide. The Washington State office serves the American Northwest, Alaska, and Western Canada, and offers the whole gamut of deep foundation testing and analysis services of which GRL is known. Services such as pile driving monitoring and high strain dynamic load testing (with the PDA and CAPWAP® software) of not only driven piles, but also helical piles, augercast piles, and drilled shafts. Other services include Bi-Directional Load Testing, Static Load Testing, Crosshole Sonic Logging, Thermal Integrity Profiling, Pile Integrity Testing, Shaft Cleanliness Testing with SQUID (Base cleanliness assessment of the soft material or “debris” thickness of drilled shafts), Shaft Area Profile Evaluation (SHAPE) Testing, SPT rig calibration, Becker Drill Instrumentation, and GRLWEAP analysis.

Marty Bixler, P.E. is manager of the Washington State office.

Highlights from 2018 include:
- **Joint Water Commission Water Treatment Plant Expansion Project, Forest Grove, OR**: Thermal Integrity Profiling and Pulse-Echo Pile Integrity Testing of augercast piles
- **SeaTac International Arrivals Facility, SeaTac, WA**: Thermal Integrity Profiling of drilled shafts and Pulse-Echo Pile Integrity Testing of augercast piles
- **SMIC Harbor Improvements, Seward, AK**: high-strain dynamic testing of steel pipe piles
- **SH 3 over St. Joe River Bridge Project, St. Maries, ID**: Crosshole Sonic Logging of drilled shafts
- **Sound Transit E335 Project, Bellevue, WA**: Temperature Monitoring Services of concrete curing in a drilled shaft
- **Potlatch Transmission Lines – Henderson Bay Crossing Rebuild, Purdy, WA**: high-strain dynamic testing of steel pipe pile
- **Private Residence in Queen Anne, WA**: Static Load Testing of helical pile
- **Various projects in Kent, Richland, and Woodinville, WA**: Crosshole Sonic Logging of drilled shafts
- **Mud Mountain Dam Fish Passage Facility, Enumclaw, WA**: Thermal Integrity Profiling of drilled shafts
- **University Village West, Seattle, WA**: Thermal Integrity Profiling of augercast piles
- **Various projects in Alaska, Oregon, and Washington**: SPT Rig Calibration

GRL Engineers look forward to the continued relationship with ASCE Seattle Section Geotechnical Group members in 2019.
Foundation Testing, Analysis and Consulting Services for Drilled Shafts and Driven Piles

- PDA Pile Monitoring
- Dynamic Load Testing
- Bi-Directional Static Load Testing
- Static Load Testing
- Thermal Integrity Profiling
- Cross-Hole Sonic Logging
- Low Strain Integrity Testing
- Shaft Area Profile Evaluation
- Shaft Base Cleanliness Evaluation

Marty Bixler, P.E.
WA Branch Manager
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grl-wa@grlengineers.com

Washington • Oregon • Idaho • Montana • Alaska • Western Canada
2018 was filled with many promotions, hires, exciting projects, and events. We opened our Tacoma office to serve our clients and increasing workload in the south Puget Sound area. We continue to service the northwest and Hawaii with geotechnical engineers in Seattle, Edmonds, Vancouver (WA), Portland, and Honolulu.

In Tacoma, Lorne Arnold was promoted to Sr. Project Engineer. In Seattle, Doug Lindquist was elected to the Board of Directors of Hart Crowser and the state chapter of EERI. Joseph Harmon, Alessandra Hosley, Zach Yell and Nathan Jones joined Hart Crowser as Senior Staff Engineers in Seattle. In Vancouver, Dan Trisler was promoted to Principal.

**Notable projects in 2018 include:**

**Transportation**
- I-5 Steilacoom-DuPont Rd. to Thorne Lane Corridor Improvements – Design Build
- I-5 / Portland Avenue to Port of Tacoma Road - Southbound HOV – Design Build
- Sea-Tac Airport projects including the International Arrivals Facility

**Development**
- Large Waterfront Campus at Piers 88 and 89
- Rainier Square Tower (at 850-feet-tall, this is will be the 2nd tallest building in Washington)
- Seattle Arena
- Seattle Children’s Hospital
- Bellevue Spring District

**Government**
- Office of Surface Mining
- Port of Everett South Terminal Upgrade
- US Navy

2018 Fun events include: FC Hart Crowser soccer team, softball team, volleyball team, monthly happy hours, holiday party, BBqs on the terrace overlooking downtown and Elliott Bay, and Cinco de Mayo “Balls for Fury” ping pong tournament.

Our Port of Tacoma Pier 4 Redevelopment project was recognized by ACEC as a Seattle Silver Best in State award winner.

To learn more about our people and projects visit [www.hartcrowser.com](http://www.hartcrowser.com).
Hayward Baker Inc (HBI) is North America’s leader in geotechnical solutions, continually evolving and expanding to meet the increasingly complex needs of the construction community. In 2018, Engineering News-Record (ENR) ranked Hayward Baker as #1 on their Top 20 Firms in Excavation and Foundation List. This marks the 17th straight year that Hayward Baker has earned the top position in this category. Hayward Baker is part of the connected companies of Keller, which includes offices in over 40 countries and on five continents. Whatever the size of the project, and wherever it is on the globe, Keller has the expertise, experience and technology to provide an innovative, robust and cost-effective solutions.

In the Pacific Northwest, HBI’s Seattle Office has offered geotechnical design and construction services for more than 30 years. We are the industry leader in Ground Improvement technologies, including Aggregate Piers and Stone Columns, Rigid Inclusions, Soil Mixing, Jet Grouting, Compaction Grouting, Chemical Grouting, Slurry Grouting, Wick Drains, and Dynamic Compaction. In recent years, we have added local staff/expertise and equipment to provide design and construction services for Earth Retention & Shoring Systems as well as Deep Foundations.

Last year, HBI’s Seattle office successfully completed more than two dozen projects extending from southern Oregon to Vancouver, British Columbia and from the Washington Coast to Idaho. Project values ranged from multimillions to less than $30,000. No job is too big or too small for HBI!

A few projects of note included:

- **Micropile Foundations** for seismic upgrade at US Navy Base (Bremerton, WA) and Snohomish County Courthouse (Everett, WA)
- **Permanent Slope Stabilization** for active landslide (Issaquah, WA)
- **Deep Soil Mixing** for Sound Transit (Bellevue, WA) and PGE (Portland, OR)
- **Aggregate Piers (Stone Columns)** for numerous public and private developments throughout WA and OR
- **Compaction Grouting** for soil improvement and groundwater cutoff (Seattle and Bellevue, WA)
- **Permeation Grouting** for excavation support inside existing manufacturing facility (Portland, OR)
- **Helical Foundation Anchors** for new private development (Seattle, WA)

In 2018, HBI added John Bickford, P.E./Senior Project Manager, focusing primarily on earth retention and micropile technologies, and Field Engineers Chris Klemmtz, Corey Snider and Filmon Asfaha to assist with the safe and high-quality execution of our projects.

HBI is committed to the success of its project partners in the geotechnical community throughout the Pacific Northwest. Please feel free to contact us with any questions you may have regarding geotechnical design solutions, constructability reviews and project pricing.

Contact: Mike Blanding, mwblanding@haywardbaker.com
John Bickford, john.bickford@haywardbaker.com
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In 2018, HWA focused on our customers’ needs by improving our process and operations, updating our equipment and technology, and nurturing our new and continued relationships both internal and external.

Over 200 New Projects. HWA continues to be fortunate to work on some very interesting projects. Starting off with bridges, HWA is currently working on over 15 different bridges, several corridors, airports, buildings, and large-scale development. Leading into 2019, HWA will be working on several WSDOT projects and continue with Sound Transit’s I405 BRT and SR 522 BRT.

Materials Testing Lab. It’s been a busy year for our full-service soil and construction materials testing lab. This year we’ve purchased an additional sieve shaker and another direct shear machine to allow us to perform grain size analyses faster for our clients’ growing needs. We continue to maintain our AASHTO R18 accreditation and our increasing staff hold several certifications from ACI and NICET.

We’ve had many proud highlights during this past 2018 year!
- Added 6 new team members! We feel fortunate to have found such amazing engineers and geologists to contribute to all the growth and exciting work we are doing all around WA state.
- Started working on 2 more new embassies in Mexico and the Bahamas
- Increased our number of fleet vehicles to service our clients
- Upgraded to the latest FWD (Falling Weight Deflectometer) processor for pavement evaluation

For the year ahead, our dedication to our clients, quality of service, and giving back to the community will continues to be our top priority.

About HWA
HWA is a Minority and Women Owned Business that provides our geotechnical engineering and geoenvironmental expertise on projects across the Pacific Northwest and abroad. Since 1978, our technically skilled team of engineers, geologists, environmental scientists, construction inspectors and laboratory technicians have been helping to create a better, safer, more sustainable environment.

Specialized areas of focus:
- Geotechnical Engineering
- Pavement Engineering
- Geoenvironmental
- Construction Inspection
- Materials Testing

Contact Info:
Kris Purrier, President
kpurrier@hwageo.com
(425) 774-0106
Kleinfeld’s Redmond team had a busy 2018 working on local projects as well as assisting other Kleinfeld offices on national and international projects. Some favorites include:

- Geotechnical Investigations for an urban sea wall replacement;
- Civic Center for a major Puget Sound city;
- Geotechnical support for progressive design-build of a stormwater interceptor;
- Rockery Condition Assessments and geotechnical studies for local municipalities;
- New Costco warehouses and expansions both nationally and internationally;
- Infiltration and groundwater studies for several regional projects;
- Slope stability evaluation and analysis for local municipalities;
- Multiple retaining wall assessments nationwide;
- Site development and foundation design for commercial development projects in Washington;
- On-going field instrumentation for local municipalities;
- Pavement condition assessments and design for commercial infrastructure facilities; and,
- SeaTac Airport improvements.

Kleinfeld welcomed several new hires to the Seattle team. **Brett O’Brien** and **William Rosso** joined our group as a staff professionals. Brett is a UW graduate and has extensive local experience in geotechnical engineering for public and private sector projects. William Rosso has several years of geotechnical and construction management experience and looks forward to work on exciting national and international projects.

**Brett Campbell** was busy working on projects within Puget Sound, across the nation and in western Canada for commercial and transportation projects. **Ranjan Satyamurthy** stayed busy with major geotechnical engineering and construction quality assurance projects for local municipalities, federal agencies, and commercial developments. He was actively involved with ASCE and authored the Transit section of the ASCE 2019 Report Card for Washington’s Infrastructure.

**Steve Lewis** continues to provide expertise in field exploration and geologic characterization and is frequently requested to support challenging field exploration programs in other Kleinfeld offices. **Jason Washburn** remains focused on supporting the new International Arrivals Facility at SeaTac Airport.

**David Cotton** continues to provide technical and strategic leadership for local commercial and transportation projects. **Marcus Byers** remains busy working in the NW as well as across Canada and in East Asia on a variety of commercial and municipal projects.

Our soils, rock and materials laboratory welcomed three new team members. Laboratory Manager **Frank Steelman** and laboratory intern technicians **Andrew Nakahra** and **Attina Gunawan**. Our laboratory is qualified by the U.S. Army Corps of Engineers, American Association of State Highway and Transportation Officials (AASHTO), and the Washington State Department of Transportation (WSDOT).

Kleinfeld has been connecting great people to the best work since 1961.
Landau Associates welcomed new staff, clients, and 168 new geotechnical projects in 2018—which made for a very busy, successful year.

Four new staff joined our growing geotechnical practice.

- **Jithin Nair** started in our Olympia office in June. He recently earned an MS of Engineering from Oregon State University and has been working on transportation and utilities projects and monitoring data center construction in central Washington.
- **Barsha Pradhan** started in the Olympia office in October. Barsha earned an MS in geotechnical engineering from Pukyong National University and is supporting several geotechnical investigation projects in Thurston and Mason Counties.
- **Amy Power**, EIT, started in our Tacoma office in December. Amy earned a BS in geology and an MS in geotechnical engineering at San Jose State University and will be supporting projects in the south Sound area.
- **Blyayne Sandau** started in the Edmonds office in January 2019 and is in the process of graduating from Montana Tech with a BS in geological engineering with an option in geotechnical engineering.

Five members of our geotechnical team received promotions in 2018.

- Annabel Warnell, EIT, was promoted to Project EIT; Annabel was also recognized as one of the company’s two Employees of the Year.
- Sean Gertz, EIT, was promoted to Project EIT.
- Daniel Simpson, PE, was promoted to Associate.
- Benjamin Ford, PE, was promoted to Senior Engineer.
- Lance Levine, PE, was promoted to Senior Project Engineer.

In Edmonds,

- **Steve Wright**, PE, managed on-call geotechnical services to the Cities of Edmonds, Shoreline, and Poulsbo, and Kitsap and Snohomish Counties, and led a significant team effort to support a large data center campus in central Washington.
- **Sean Gertz**, EIT, managed the City of Edmonds Lorian Woods Slope Study and led the Snohomish County Paine Field Runway Rehabilitation field investigation.

In Olympia, projects of note included

- The now-complete WSDOT I-5/Chamber Way Bridge Replacement in Chehalis (PM Daniel Simpson);
- Bridge and culvert replacement projects in Thurston, Mason, and Grays Harbor Counties (PMs Ben Ford, Calvin McCaughan, and Daniel Simpson);
- Geotechnical investigations for Mason County’s Skokomish River Valley habitat restoration (PM Annabel Warnell);
- New school and modernization projects for the Tumwater, Centralia, Clover Park, and Yelm School Districts (PM Lance Levine); and
Malcolm Drilling is the leading drilled foundation contractor in the United States. We provide geotechnical construction services including: excavation support and earth retention systems, drilled shafts, augercast pile foundations, micropiles and underpinning, cutoff and secant pile walls, structural diaphragm walls, construction dewatering, as well as ground improvement services including chemical and jet grouting, deep soil mixing, Cutter Soil Mixing, dynamic compaction, rigid inclusions and stone columns. These services have been applied on complex and technically challenging projects throughout North America. Malcolm Drilling continues to grow, expanding its expertise and geographical reach. Our continued investment in equipment and personnel is instrumental in keeping Malcolm the most sought-after, full-service geotechnical contractor in the US.

Based in San Francisco, California with full-service equipment yards in Los Angeles, Hayward, Seattle, Salt Lake City, and Miami; Malcolm Drilling provides geotechnical construction services across the United States and Canada. Its extensive equipment fleet ranges from some of the world’s largest drill rigs and oscillators, capable of excavating large diameter shafts and caissons, to specialized limited access and low-headroom drilling equipment, capable of passing through interior doorways. With the addition of diaphragm wall construction equipment, and other recent acquisitions enabling an increased work volume, Malcolm continues to expand its territory and equipment fleet, improve its technical capabilities, and grow its family to better service a wide variety of challenging projects and remain the top contractor of its class.

Some notable recent projects completed or acquired include:
- **Microsoft Campus Refresh;** Redmond, WA: ~450,000 SF of earth retention.
- **Seattle Center Arena Renovation;** Seattle, WA: ~147,000 SF Shoring & 4’OD x 70’ drilled shafts.
- **5th & Union;** Seattle, WA: 80,000 SF soldier pile & lagging/secant pile shoring system.
- **REI Headquarters;** Bellevue, WA: Aggregate Piers, Soldier Pile & Lagging shoring.
- **Indianapolis Drop Shafts;** Indianapolis, IN: 30 ea. – 7’ to 12’ OD shafts up to 140’ deep.
- **Second Narrows Water Tunnel;** Vancouver, B.C.: Structural Diaphragm Wall 275 feet deep.
- **SR-520 West Approach Bridge - South;** Seattle, WA: 75 – 8’ to 9’ OD deep shafts to 175 ft deep.
- **S. Landers Street Grade Separation;** Seattle, WA: 10 ea. – 10’ OD drilled shafts x 200 ft deep.

Malcolm continues to advance geotechnical construction through active participation in ADSC, DFI, the Geo-Institute and ASCE. For assistance with innovative geotechnical solutions, please contact **John Kvinsland** (jkvinsland@malcolmdrilling.com). For a complete list of our services and contact details please visit our website (www.malcolmdrilling.com).
2018 was a busy year for McMillen Jacobs Associates in the Pacific Northwest.

- Our Design-Build team delivered numerous contracts for Sound Transit’s E360 (SR 520 to Overlake Transit Center) project.
- We submitted the 100% design package on Seattle Public Utilities (SPU) Ship Canal Water Quality Project – Tunnel Storage.
- Metro Vancouver’s Second Narrows Water Tunnel project is now in construction.
- We continued to lead Seattle City Light’s Multidisciplinary Engineering Services team.
- In the spring, we were awarded the Golden Ears Forcemain and River Crossing project for Metro Vancouver.

The geotechnical and rock engineering group has been busy throughout the region. We’ve worked on numerous emergency responses for rockslides and site characterization/rock mechanics design and construction projects, most of which involve the use of rope access inspection by our trained geotechnical engineers and geologists. These include

- Avista Hydroelectric projects at Post Falls and Cabinet Gorge in northern Idaho;
- Investigations for BNSF snowshed repair, siding extensions, and track upgrade projects in Washington, Wyoming, Montana, Oregon, and Idaho;
- Cowlitz Falls rockfall mitigation for Lewis County PUD; blasting design for Seattle City Light at Ross Dam; and
- Debris boom anchor design for Puget Sound Energy at Lower Baker Dam.

We are also running rope access safety programs for WSDOT, FHWA, contractors, and consulting firms.

Construction continues on the Northgate Link Extension on all three stations: U District, Roosevelt, and Northgate, with two of the stations being delivered using GCCM delivery methods.

Our Construction Management (CM) Division continued work on Sound Transit’s East Link Bellevue Segment Construction Management Consultant Services. As CM on the Alaskan Way Viaduct Replacement Program, we wrapped up our work with WSDOT at the end of the year and are looking forward to the new tunnel opening in February 2019.

New hires in 2018 include

- The Seattle office welcomed Nate Gockel, Claims Project Consultant; Claire McConnell, Project Architect; Richard Mitchell, Lead Inspector; Emily Rodriguez, Project Controls Assistant. Cecilia Burke, Staff Civil Engineer, will be coming on board in January 2019.
- Anne Marie Havekost, Senior Project Geologist; Glynis Prakash, Administrative Assistant; and Jeffery Quinn, Project Engineer joined our Portland office.
- The Vancouver office continued to grow with the addition of Jason Yeung, Senior Staff Engineer and Ryan Liu, Geotechnical Engineer, who will be joining the office in January 2019.
SPU Geotechnical Engineering is responsible for completing geotechnical studies to support design and construction of City capital improvement projects, as well as operations and maintenance projects. We also perform special studies and provide technical consultation for various City activities.

During 2018, we said goodbye to a valued member our team and welcomed a new member.
- **Keishi Hashimoto**, L.G. left the City to both be closer to his family and pursue a career change. We were sad to see him go.
- **Kori Black**, EIT joined our group in July, and we are very pleased to have her. Kori has a BS in Geological Engineering, Geology and Geophysics, and Environmental Studies, and previously worked for Wood for 2 years.

Our group continues to be led by Juan Carlos Ramírez, P.E., Geotechnical Engineering Supervisor. Our staff continues to include
- **Megan Higgins**, P.E, Senior Geotechnical Engineers,
- **Sean Caraway**, P.E., Senior Geotechnical Engineers,
- **Aaron Clark**, L.G., Senior Geologist, and
- **Hilja Hartt**, Associate Geotechnical Engineer.

The SPU Geotechnical Engineering Group has continued its involvement in high profile SPU projects, such as
- The South Transfer Station Phase II,
- A large slope stabilization study at the Tolt Watershed, and
- The Natural Drainage Systems for both Thornton and Longfellow Creek Basins.

During 2018, we also worked on various phases of a range of facility improvement projects for Seattle City Light, Seattle Parks and Recreation and Seattle Department of Transportation.

We are happy to continue to work on increasingly interesting projects for the City. We actively seek continuing education opportunities, and appreciate the efforts of the local ASCE Section Geotechnical Group in providing us with accessible professional lectures and seminars.
Seattle Department of Construction and Inspections (SDCI)

Contact: Susan Chang, Ph.D., P.E.
Susan.Chang@seattle.gov

The Geotechnical Engineering Review Group at SDCI had another year of record permit volumes, and our group of engineers performed over 3600 permit application reviews, including initial plan reviews and corrected plan reviews. We also had over 2000 special inspection projects where we evaluated field reports and final letters.

Our current geotechnical group consists of Dean Griswold, P.E.; Rob McIntosh, P.E.; Jim Mattoon, P.E.; Scott Pawling, P.E., and Pao Huang, Ph.D., P.E. Pao started with us at the end of October 2018, and he comes to us from GeoEngineers. We were also happy to have Claire Gibson, P.E. of Clarity Engineering join us as a part-time consultant reviewer earlier in the year.

A major change for SDCI in April was the transition to a new permit tracking system called Accela. With the change to Accela, SDCI is changing the geotechnical special inspection program so that special inspectors will upload their field reports and final letters directly to the SDCI Portal. If you have not already set up an account for your firm or received an email from SDCI in late October/early November with information that an account had been set up for you, please go to http://www.seattle.gov/sdci/inspections/special-inspections for instructions on how to set up an account and how to upload documents.

If your firm sometimes applies for permits as well as acts as a special inspector, please set up two separate accounts so that one account is solely for geotechnical special inspections. Please also make sure that there is only one geotechnical special inspection account for each firm. If you have trouble setting up your account or have trouble uploading documents, please send an email to susan.chang@seattle.gov, and I will forward your email to someone on the Accela team who can help you through the process.

On February 28, 2019, we will deactivate the emails (scigeo@seattle.gov and scigeofinalletter@seattle.gov) that you formerly used to send in field reports and final letters.

We look forward to working with all of you in 2019!
Shannon & Wilson enjoyed a successful 2018 in the Pacific Northwest and across the county. Engineering New Record (ENR) ranked Shannon & Wilson 239 of its top 500 Design Firms, and 32 of the top 50 Trenchless Engineering Firms. In addition to rising in our ENR rankings, we continue to work on fascinating and regionally impactful projects, delivering our commitment to technical excellence in all that we do.

The staff at Shannon & Wilson are among our greatest assets. We’ve had many quality additions in 2018, celebrated tremendous milestones, and shared our appreciation for project success.

**New Seattle Additions:**
- Caleb Bolin, PE – Hydraulic Engineer
- Genevieve Sasaki, PE – Geotechnical Engineer
- Bob Sas – Geologist
- Kevin Szubrych – Geotechnical Staff
- Travis Gallatin – Geologist
- Mashayla Combs – Geotechnical Staff
- Justin Brooks – Geologist
- Daniel Schwicht – Geotechnical Staff
- Hamid Nouri, PE – Geotechnical Engineer
- Joe Sawdey – Environmental Geologist
- Jennifer Goldsmith - Geomorphologist

**Milestone Anniversaries:**
- Paul Godlewski, 40 years
- Will Hultman, 30 years
- Hisham Sarieddine, 30 years
- Paul Van Horne, 30 years
- Steve McMullen, 25 years
- Marty Boivin, 15 years
- Dave Randall, 10 years
- Jason Funk, 5 years

**Newly Licensed Staff:**
- Ben Warren, PE
- Brendan Cito, PE
- Creighton McCartney, PE
- John Schober, PE
- Justin Cook, PE
- Kerem Kalkay, PE
Over the last two years, Soldata has had a transformation into the company known as Sixense. Soldata is known for their expertise in advanced monitoring and diagnostics technologies to mitigate risks connected to the construction and operations of sites. Over ten business entities have formed together to create Sixense, providing an engineering, digital, monitoring and software platform company. In addition, Soldata was a key subcontractor on the Alaskan Way Viaduct project using automated motorized total station’s (AMTS’s) and Atlas satellite monitoring. Advitam was another company with presence in North America that was part of the merger. Advitam is known for software development for asset management, along with structural health monitoring for bridges. Recently, Advitam was selected to provide the structural health monitoring system portion of the Ohio River Bridge East End Crossing, in Ohio, USA. Additionally, an advanced asset management software system was implemented for the Champlain Bridge project in Montreal, Quebec, Canada. The system is using a 3D bridge model for access to various documents, photos, and inspections which are directly linked to the relative element on the model. Over the past year, Sixense was featured on the cover of the Tunneling Journal and featured in a roundtable discussion in their October 2018 issue. Sixense was named as a major subcontractor for the winning consortium team on the Northlink Extension project in Seattle, WA. who were subsequently awarded the Tunnel Achievement Award.

Sixense provides many different options for construction site analysis and monitoring from conception to end of life.

- For new construction, site characterization and preliminary works: LIDAR mapping (airborne and terrestrial), photogrammetry (terrestrial, drones), geophysical investigations, and atlas (ground settlement analysis using satellite radar imaging).
- Instrumentation and real time monitoring (ground, surface and sub-surface, structures, environment) can be provided during construction along with structural health monitoring.
- Environmental compliance (noise and vibration) is another service offered, including propagations models and recommendations to minimize the nuisance and ensure compliance with local regulations, also monitoring to control the compliance.
- Lastly, forensic services: full diagnostic on pre-stressed and post-tensioned structures (PT, corrosion, delamination, etc.), aging models of structures, recommendations and remediation plan, cathodic protection (diagnostic and design), visual and airborne inspections.
Local Tensar Representatives:

Jordan Rabin  
(206) 518-2318  
JRabin@Tensarcorp.com  

Gary Sander  
(360) 981-0222  
GSander@Tensarcorp.com

Tensar is the global leader in geosynthetic product and design technologies used in civil, environmental and infrastructure projects. Since 1982, Tensar’s proven technologies have provided solutions to owners, public agencies, consultants and construction professionals across the US and throughout the world. These solutions and systems have many applications including:

- Cost saving reductions of asphalt and aggregate layers in flexible pavements
- Improved support characteristics under rigid pavements
- Improved pavement performance and longevity
- Haul roads and soft subgrade improvement
- Differential settlement and seismic liquefaction mitigation below structures
- Crane pads, laydown yards and working surfaces
- MSE walls and reinforced slopes
- Coastal and waterway protection systems
- Waste and environmental projects

**2018 Key Project:** I-5 MLK to Ravenna Design-Build  
**Owner:** Washington State DOT  
**Designer:** CH2M  
**Contractor:** Atkinson Construction  

In anticipation of encountering unsuitable subgrade soil along the main alignment, TriAx geogrid was used to reduce the amount of over-excavation and import material required to create a firm and unyielding aggregate base layer. Mechanically stabilizing the aggregate base layer with TriAx geogrid allowed the contractor to bridge over unsuitable subgrade conditions faster than with conventional methods. This was critical due to the short working time frames.

**Tensar Pacific Northwest Team**  
Tensar provides an experienced team based in the Pacific Northwest. Roadways Manager Jordan Rabin, Walls & Slopes Specialist Gary Sander, P.E. and West Area Engineer Garrett Fountain, P.E., G.E. provide field and technical support to the geotechnical community throughout the Pacific Northwest. As your local Tensar resources, we provide the engineering and contractor community with:

- Site assessments for geogrid applications  
- Project review and development of value-engineering concepts  
- Preliminary and/or stamped designs  
- Specification development and review  
- Geogrid installation guidance/oversight  
- Preparing submittal documents  
- Technical training and seminars  
- Onsite subgrade strength evaluations  
- Free test rolls of geogrid

Learn more about the many ways Tensar can provide solutions for common site development problems at www.TensarCorp.com/JordanRabin.
Join us for a Half-Day Seminar Focusing on Civil Engineering & Construction

Tuesday, March 5, 2019 | Seattle, WA | $60*

*Early Bird rate ends Feb 22

Tensar International Corporation and Geopier Foundation Company are pleased to host a technical seminar covering a variety of civil engineering and construction topics. Attendees will be able to choose from several breakout sessions based on their individual interests. Attendees can expect: technical experts on various civil and geotechnical construction applications; geosynthetic product demonstrations; hot lunch buffet; and networking opportunities.

Groundhog readers will get a $10 discount with code: GROUNDHOG
Learn More & Register Online @ www.TensarCorp.com/Seattle
The Seattle geotechnical department grew to a size of 20 engineers and geologists in 2018 and more than doubled its revenue over the past three years. As one of the complex project technical resource centers within Terracon, our geotechnical department specializes in GeoDesign (Richard Luark’s group), transportation and infrastructure (Dennis Stettler’s group), and earthquake engineering services (Dave Baska’s group). Jim Schmidt’s presence in the Seattle office as Terracon’s National Director of Transportation once again helped our stature as the go-to office.

Our local GeoDesign projects during the year included:
- 1120 Denny Way
- UW Computer Science Building
- Federal Reserve Building renovation
- Two, 16/17-story office buildings with four levels of below grade parking
- A 48-story building with six levels of below grade parking
- Two, 24-story multi-family towers with two levels of below grade parking

Transportation and infrastructure projects in 2018 included:
- WSDOT I-5/SR-16 Interchange design build project in Tacoma
- King County Kent-Auburn Conveyance System
- WSDOT I-82 South Union Gap Interchange and Ramps design build project near Union Gap, Washington
- Virginia Department of Transportation I-66 design build project in Fairfax, Virginia
- UPS Facility at King County International Airport in Seattle, Washington

Geotechnical earthquake engineering projects in 2018 included:
- Veterans Administration Hospitals in St. Louis and Portland
- US-89 in Utah with multiple crossings of the Wasatch Fault
- A 10-story hotel addition adjacent to the San Andreas fault
- An oil and gas facility near the New Madrid Seismic Zone
- Gypsum Wash dam in Utah
- Site response and liquefaction analyses at a nuclear power plant

On a national level, Terracon has grown to more than 4,500 employees in more than 140 offices. Our Engineering News Record ranking advanced to No. 24 in the Top 500 Design Firms list and to No. 9 in the Top 100 Pure Design Firms list.
Wood Environment & Infrastructure Solutions, Inc.
The Wood Environment & Infrastructure Solutions, Inc (formerly Amec Foster Wheeler) geotechnical engineering group in Washington State serves local clients from multiple offices in the Puget Sound region. We are connected to over 400 geotechnical engineers and geologists in our offices across North America.

To meet increased demands, Wood’s local geotechnical group hired three new geotechnical engineers and two new geologists in 2018. Hires include:

- **Alec Anderson, PE:** Experience includes trenchless technology, tunnel monitoring, construction management, shaft design, slope stability, field investigations, and geotechnical reports. Alec is currently pursuing an MBA at the University of Washington.
- **Dong-Soo Lee, PE:** A senior geotechnical engineer with site characterization and geotechnical engineering experience in California, Colorado, Oregon and Washington. Dong-Soo is currently involved with an industrial plant expansion project in Oregon, and a sediment remediation project in Elliott Bay.
- **Nick Mellisop:** A New Zealand native, Nick’s experience includes site characterization, liquefaction and slope stability assessments, and geological mapping. Nick worked extensively in Christchurch, NZ following the Canterbury Earthquake evaluating liquefaction vulnerability.
- **Carlos Mendoza:** A Geology graduate from the University of Washington, Carlos has been providing local construction monitoring services.
- **Aasim Khan:** An Engineering Geology graduate from the Western Washington University, Aasim has also been providing local construction monitoring services.

We have

- **Jim Dransfield** continues providing geotechnical engineering and consultation locally and across western US, including waterfront docks and parks, bridges, dams and levees, stormwater conveyance and culvert projects.
- **Todd Wentworth** has been working on roadway improvements and retaining walls for local cities; housing developments in Seattle; and several school projects. He has also been providing third-party critical areas geotechnical engineering reviews for local cities.
- **Milan Radic** has been providing geotechnical engineering services for roadway improvements, and waterfront, school, and multi-family housing projects.
- **Bill Lockard** worked on the Bunker Hill Central Treatment Plant in Kellogg, ID for most of 2018.
- **Henry Brenniman** continues conducting slope stability assessments for several cities, and road improvement projects.
- **Konrad Moeller** has been managing multiple construction monitoring projects for school districts and commercial developments.
- **Emily Knutsen** works in our Tacoma office providing geotechnical services mainly in Pierce and Kitsap Counties.
- **Pat Reed** continues providing geotechnical and environmental services for a variety of local projects.

We look forward to new opportunities to contribute our expertise to regional and local transportation projects, ports, levees, and municipal facilities, while continuing to collaborate with other Wood offices worldwide.
Career Opportunities

Kleinfelder’s Redmond office is busy and growing! We are seeking a **Project to Senior level Geotechnical Engineer** and **Special Inspectors** to join our team and take their career to the next level. We have been providing geotechnical and construction materials testing services in the Pacific Northwest for over thirty years and have built a fantastic local client base in municipal, industrial, technology, transportation, and commercial market sectors. We offer a collaborative team environment and opportunities for mentoring, professional development, and interaction with Kleinfelder’s national team of geotechnical subject matter experts.

**Project to Senior Level Geotechnical Engineer**

The ideal candidate will possess a WA PE, a MS in Geotechnical Engineering, a minimum of 10 years of related experience and at least 5 years of project management experience. This person will be responsible for managing all phases of project delivery with a team of geoprofessionals including proposing, planning, and executing technical work. This person will work with our team to identify, propose, and develop work with new and existing clients. They will manage a diverse portfolio of work, direct project teams, and mentor staff.

**Special Inspectors - SIGN ON BONUS UP TO $2,500** (Depending on Certifications)

We’re looking for **special inspectors** with reinforced concrete experience to join our team. This position is actively engaged on a variety of construction sites performing special inspections and testing of construction materials in the field. We are looking for individuals who are interested in in joining a dynamic fast paced team with a client and project focus while advancing their career in the field of construction special inspections and materials testing. **Required Certifications include: ACI Concrete Field Testing Technician - Grade I, Nuclear Gauge / Troxler, ICC Reinforced Concrete** and ability to obtain WABO certification within one month after hire if not already certified. **Desired Certifications include: ICC/WABO Pre-Stressed Concrete (PT) and ICC/WABO Structural Welding.** Must be able to use a tablet and a general knowledge of MS Office including Word, Excel, and Outlook is required. Must have a valid driver’s license, a clean driving record and willingness to travel throughout Washington.

Kleinfelder has nearly 2,000 employee-owners with offices nationwide and abroad. With over 50 years of experience, Kleinfelder’s reputation for providing innovative, commonsense solutions to the most complex challenges has solidified its status as a trusted partner to its global clients and a leader in the industry. Kleinfelder offers an excellent compensation and benefits package including medical, dental, vision, life insurance, 401(k) plan, and paid holidays.

Kleinfelder is an Equal Opportunity Employer – Minorities/Women/Disabled/Veterans (Compliant with the new VEVRAA and Section 503 rules).

To find out more about us, please contact: **Caroline Brabrock/ CBrabrock@Kleinfelder.com/ (425) 636-7900**