

FOUNDATIONS

NEWSLETTER OF THE GEO2YC DIVISION OF THE NATIONAL ASSOCIATION OF GEOSCIENCE TEACHERS
Volume VII, Issue 1: March 2018

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on Friday, July 27, on the campus of the University of Maryland, College Park, MD
<https://serc.carleton.edu/NAGTWorkshops/earlycareer2018/index.html>

While the deadline has passed, **we are currently holding spaces for faculty from 2 Year Colleges to join us.** We are likely to offer scholarships, as we have in other years, to defray the cost of the workshop. **If you are at a 2YC, please submit your application ASAP!**

If you are in your first three years of a permanent faculty position, please apply to join us for a multi-day workshop in a stimulating and resource-rich environment where you will participate in sessions on topics including effective teaching strategies, course design, establishing a research program in a new setting, working with research students, balancing professional and personal responsibilities, and time management. Participants must have a full-time faculty position at a two-year or four-year college or a university at the time of the workshop and must be in their first three years of full-time teaching or starting a full-time position in the Fall. The workshop is offered by NAGT On the Cutting Edge professional development program for geoscience faculty with support from the National Science Foundation, Geological Society of America and American Geophysical Union.

The workshop registration fee is estimated at ~\$1250 (\$1200 for NAGT members). Accommodations and some meals may be covered by the registration fee, pending support from NSF. Travel is not included in the registration fee. Participants or their home institutions must provide transportation to and from the workshop. In cases where the cost of attending this workshop would


Early Career Workshop

by Kaatje Kraft

*Whatcom Community College
Bellingham, WA*

As one of the facilitators, this experience can be transformative in your early career and two-year college faculty are strongly encouraged to apply (come keep me company!). We're still waiting to hear if there is additional funding available, but if you're interested and funding is the make or break, please let me know (kkraft@whatcom.edu) so I can pass that information on to our lead facilitators. Please share this with your colleagues who you know may be new to the geoscience academic world!

**Early Career Geoscience Faculty Workshop:
Teaching, Research, and Managing Your
Career: July 22-26, 2018** with optional trip to NSF

cause financial hardship, you may be able to apply for a stipend to help defray these costs. Ask your department or university for funds to attend as well – many have been quite supportive. The registration fee will be due in May after notification of acceptance into the workshop. 

Outstanding Adjunct Faculty Award: Call for nominations

If you have a colleague who inspires you to try new teaching strategies, who shares innovative classroom assignments, who makes a difference in your department, or who simply does an amazing job of encouraging their students and community to engage with geoscience, please nominate them for recognition at:

http://nagt.org/nagt/divisions/2yc/oafa_nomination.html.

If you would be interested in serving on the award committee, please contact Karen Layou at klayou@reynolds.edu for more information.

President's Column(s!)

Serving your community, profession, and planet

by Callan Bentley

*Northern Virginia Community College,
Annandale, VA*

I'm now halfway through my tenure as your Geo2YC president, and I wanted to share a few thoughts today about service.

Service is a funny word – in many contexts, it means doing what you're supposed to do. In others, it means going beyond mere expectations to achieve something extra – something that makes the community, country, discipline, organization, or world a better place. What kinds of service are available to us? Which are feasible to accomplish?

I spent last year as the President of the Geological Society of Washington, a 125 year old scholarly society that meets a dozen times each year at the Cosmos Club in DC. The Society was founded by

the geological luminaries of a bygone age, including John Wesley Powell, Charles Walcott, Florence Bascom, Nelson Horatio Darton, William Henry Holmes, Bailey Willis, Grove Karl Gilbert, and Ellen Hayes. I first joined the Society 15 years ago, [it was as a confused graduate student](#). A decade and a half later, to helm the Society as its first President from a community college was a terrific honor. During my time in charge, I helped plan for the quasiquicentennial, emphasized a new set of talks on meta-science (like the study of the denial of climate change), facilitated a visit from BBC legend Iain Stewart to deliver our annual Bradley Lecture, and pushed for gender parity among our speakers. I list these efforts here because I want to emphasize to you that each of us can advance the cause of progress in the roles in which we serve. I'm proud of my record at GSW, and hope to be similarly proud when I had over the reins of Geo2YC to Joy Branlund in Indianapolis later this year.

How do you serve? Doubtless you serve in many roles. I think first of your job. You fulfill the duties of your teaching position: You plan your classes out, doubtless with a spirit of innovation and self-reflection, utilizing teaching principles that have been validated by empirical educational research. You learn your students' names, showing you care about them as individuals. You seek out their contributions to the class discussion, and help them cultivate a personal sense of 'science identity.' You score their assignments in a timely fashion and return them with useful feedback. You arrange for them to have positive, insightful field experiences, and to complete challenging, multifaceted laboratory exercises. You might sponsor a geology club, or facilitate your departmental seminar series. Maybe you're leading an internship collaboration with a local employer. Perhaps you serve on a college committee where your Earth science chops are a useful contribution: a sustainability committee, a hiring committee, an Honors program steering committee. You might organize outreach activities or demonstrations as part of college recruiting days, community open houses, or celebrations like Arbor Day or Earth Day. You might peer review a paper, or give an interview to the local newspaper, or guide a student through submitting their first abstract to a GSA meeting.

You may have spent time in your life as a member of a national service group, such as the armed

forces, the Peace Corps, Teach for America, GeoCorps, or another national level program that puts your effort to work on behalf of the national interest. Many of my students have served in the armed forces, and I have served in the Peace Corps (1998-1999) in Mongolia. Those were the days: teaching Mongolians English in a 1000-person village on the border with Siberia, teaching Mongolians about Americans, teaching Americans about Mongolians. It was a formative period in my life, and I daresay I served my country well, mainly by staying alive. On Veteran's Day, we habitually celebrate those who serve their nation through the armed forces, but in my mind, it's also a day for commemorating the contributions of diplomats, elected officials, and volunteers who push for action on behalf of the greater good.

Family is another area in which I know many of you serve. We have responsibilities to our parents, our spouses, our children, our communities. Meeting these responsibilities fully at the same time as our jobs might be all we can manage. I know that there are many days when I put my five-year-old son to bed at 8pm and have zero reserves left for anything else. But if there's energy and time left over, there are other ways we can serve, too.

How can we extend our service? Let's start by considering outreach.

I've just finished a decade of blogging about geology, including seven years at [Mountain Beltway](#), hosted by the [AGU Blogosphere](#). I haven't gotten paid a nickel for my blogging during that whole span, but I've gotten to help share my love of the planet and my love of knowing how we know about the planet, with the wider national/international audience. I've seen huge spikes in readership during current events like earthquakes or eruptions, as well as when I've waded into discussions of controversial topics, like "intelligent design" creationism, or the anti-science attitude projected by most members of a major American political party.

In many ways, I consider my online presence (I [tweet](#), too) one of the most useful things I've done with my career so far. On many topics, my online missives are shallower than what I get into with my classes, but on other topics, I'm able to dive so much deeper. I've gotten feedback from students

trying to learn particular topics that claim my blog post helped them understand it far better than their professor did. This is cool: this is validation. I'm glad to have helped out in this way.

But are these lessons something you can apply to your situation? Not everyone wants to commit to starting a blog or podcast or other frequently-updated online public outreach mouthpiece. But all of us live in communities where we are surrounded by non-geologists, some of whom are interested in the stuff we spend our time thinking about. I encourage you to accept invitations to give public lectures on geoscience, whatever the topic may be. It could be general (like plate tectonics or the rock cycle), it could be regional (geologic history of your state, for instance), or it could be current events (something topical like a large recent earthquake, or how climate change is forecast to influence your region). I've given a hundred or so public talks in the past ten years, including public-interest field trips. I've found it incredibly rewarding. Every talk I give seems to lead to another, as word of mouth spreads the endorsement from one organization to another. You too can serve the geosciences by sharing your passion with the public through occasional talks.

Another example of something I've been up to is serving on the planning committee of the 2018 Earth Educators' Rendezvous. This has been an enjoyable team effort, meeting every few weeks in the fall to orchestrate a master plan for the Rendezvous. My work on the committee included advocating for digital technology sessions, K12-focused session on the Next Generation Science Standards, and – yes – workshops applicable to the two year college community. I feel I've helped to craft a more relevant, more useful Rendezvous. [I hope you'll be there, July 16-20 at the University of Kansas](#). It's a weeklong meeting entirely suited to the work we do.

A much smaller scale example is the work I've been doing helping plan our state community college system's biennial Science Peer Meeting. Advocating for geoscience on a planning committee full of Big Gorillas like Chemistry and Biology is a valuable service for our community. Someone has to do it. Planning national or regional meetings is an important way you can serve.

I also served this last year on [the committee](#) that determined who would get the AGU's [Perlman Award for Excellence in Science Journalism](#). This was a pretty minor time commitment that had me read through a few dozen excellent geoscience articles from the press, and with my fellow committee members, whittle the list of candidates now, discuss them, and ultimately award the prize. It was a simple, fun way to serve. AGU has many awards that need committees of thoughtful people to help manage, and many other organizations are the same. So in addition to adding to the pool of nominees, you can also serve by helping cull those nominees to find the very best of the best.

Another area that I'd like to see more Geo2YCers serving in is award nominations. I consider it a vital service to look around you for people who are doing excellent work, and then to nominate those people for official recognition. There are many venues, many opportunities to recognize your peers with validation through regional and national awards. A few of them are:

- AAPG Foundation's [Inspirational Geoscience Educator Award](#)
- AAPG's [Grover E. Murray Memorial Distinguished Educator Award](#)
- GSA Geoscience Education Division's [Biggs Award for Geoscience Teaching Excellence](#)
- AGU's [Excellence in Geophysical Education Award](#)
- AGU's [Ambassador Award](#)
- AGI's [Medal in Memory of Ian Campbell for Superlative Service to the Geosciences](#)
- AGI's [Award for Outstanding Contribution to Public Understanding of Geology](#)
- AGI's [Edward C. Roy, Jr. Award for Excellence in K-8 Earth Science Teaching](#)
- AWG's [Outstanding Educator Award](#)
- Geo-CUR's [Undergraduate Research Mentor Award](#)
- NESTA's [Jan Woerner & Harold B. Stonehouse Lifetime Achievement Award](#)
- NAGT's [Outstanding Earth Science Teacher Award](#) (many of these available, at each state)
- NAGT's [Neil Miner Award](#)
- NAGT's [James H. Shea Award](#)
- And, of course, the NAGT Geo2YC Division's [Outstanding Adjunct Faculty Award](#) (!)

There are also potentially opportunities to nominate colleagues for awards at the campus or college level, perhaps at the state or regional level. In northern Virginia, for example, we've got the State Council on Higher Education in Virginia's Outstanding Faculty Award, the Virginia Community College System's Chancellor's Award for Teaching Excellence, The NAGT Eastern Section's [John H. Moss Award for Outstanding College Teaching](#), the NOVA Educational Foundation's Faculty of the Year Award, and even the campus-level "SuperProf" Award from our Center for Excellence in Teaching and Learning. I'll bet that your local awards landscape has a similar topography.

Whew! It's kind of a lot. What a great situation for us to be in!

Surely, with all these organizations looking to showcase the best and brightest, you can think of someone who deserves to be recognized with one of these awards. You serve the community by taking the time to organize a nomination package on his or her behalf. I personally keep myself on task by shooting for a target of two nominations per year, one in the spring and another in the fall. Maybe (as a belated New Year's resolution?) you could resolve to nominate one colleague for one award per year. It's a start – and it's a useful contribution. Thanks in advance.

Finally, consider direct service to your planet. The Earth has been around for 4.6 billion years of good times and bad, and you might not think she needs much in the way of your service. But over the course of my lifetime, the human population has doubled. Each of these individuals imposes some impact on the planet, and those of us in conspicuously-consuming Western societies are among the most impactful. Maybe we should be called *Homo metastasis*. The numbers of wild species are declining, the connections between their ecological roles fraying. There are many reasons for this – habitat fragmentation, ocean acidification, pollution, invasive species, climate change. For a geologically-informed perspective on the current situation, I endorse Elizabeth Kolbert's Pulitzer Prize-winning book, *The Sixth Extinction*. The planet needs people who understand the planet to advocate for the planet. Humanity is the only conscious species on the planet: We need to manage

the planet in a way that doesn't undercut the future of all organisms, including our own species. Teaching Bowen's reaction series is important, but I reckon the most important impact we can have is likely in this more 'empirical environmental' realm.

What about balance? It's hard to serve everyone at the same time, and the good news is that no one has to do that. We can choose our battles, extending our efforts where appropriate, where useful, where it doesn't cost us too much to participate. Some responsibilities will never go away, while others ebb and flow in our lives like tides coming and going. Do what you can. It's okay to focus locally for a time, and nationally maybe later. It's okay to limit yourself to your campus and it's okay to reach for the stars. But I hope you'll always be asking yourself if there's room in your life to be a little more effective, to serve a bit more.

I'm grateful for your service. Your students and your college should be too. Thanks for all you do. 🏔️

Congratulations to Wendi J.W. Williams, 2017 Annual Outstanding Adjunct Faculty Winner!

by Karen Layou

Reynolds Community College, Richmond, VA

The Geo2YC OAFa Committee is pleased to announce Wendi J.W. Williams as our 2017 Annual Outstanding Adjunct Faculty Winner. Wendi, who currently serves as the Geo2YC Division secretary/treasurer, was chosen from an outstanding group of 2017 OAFa Honorees with votes cast by NAGT members. Wendi was recognized in the May 2017 issue of Foundations for her teaching efforts at NorthWest Arkansas Community College and University of Arkansas-Little Rock and extensive committee and board service across the geoscience community. In addition to a complimentary annual membership to NAGT and the Geo2YC Division, Pearson Education has generously agreed to provide Wendi with a \$750 stipend to support her professional development,

such as attending a regional or national conference, participating in a professional development workshop, or the development of a classroom activity. Thanks to Pearson for their continued support of this award for our adjunct colleagues. Congratulations, Wendi—we appreciate the opportunity to recognize the efforts of our colleagues, and are thankful for all you do. 🏔️



Wendi Williams leading a STEM outreach activity.

Fall Outstanding Adjunct Faculty: Russ Kohrs


by Kaatje Kraft

*Whatcom Community College,
Bellingham, WA*

Russ Kohrs is an outstanding individual in many respects: as a citizen and father, as an Environmental Geosciences Teacher at the

Massanutten Regional Governor's School for Integrated Environmental Science and Technology (MRGS), and since 2014, also as an adjunct faculty member at Lord Fairfax Community College, in Middletown, Virginia (LFCC). Russ serves in two roles at LFCC: (1) he teaches one to two evening courses per semester (Physical Geology, Historical Geology, Earth Science, and Environmental Geology, all with a lab component) and (2) he teaches at dual-enrollment course at MRGS. In both capacities, Russ has been very positively evaluated. Russ's former LFCC supervisor, Ann Simpson, reports that, "In my position as Program Lead at Lord Fairfax Community College, I have observed Russ Kohrs in action in the classroom and have been extremely impressed with his contagious enthusiasm and his desire to engage students about the wonders of geology. Russ turns rocks into stories that students find captivating." Liz Dingess, Russ's current supervisor, tells me "Russ is fabulous and is my go-to guy for geology! He is constantly trying new teaching techniques in both lecture and lab to get his students engaged and loving geology as much as he does. Russ dedicated quite a bit of time to create a new class last year for us; 'Environmental Geology'. Russ's passion and enthusiasm for his subject matter comes shining through everything I talk with him. He is the perfect candidate for this award." LFCC student reviewers said of Russ that he has "Great field trips, great passion," and that he is "absolutely amazing. Not only is he very personable and caring, but his passion for Geology and excellence in teaching are inspirational. I hate science, but his course made me love it." Russ has written several thoughtful, detailed articles for the NAGT Eastern Section newsletter, Bulletin: (a) one on his experience using a 'geochemistry of subduction zones' exercise that he found on the SERC site, then tried out, modified, and critiqued, and (b) one in the most recent issue that details a research project he's having his (dual enrolled) high school students to develop a water filtration system for a community in Kenya. This fall, they have designed and built a prototype bone char furnace to allow fluoride in the water to be reduced. This winter, he and a bunch of his students traveled to Kenya to install the facility.

He has contributed to the technical and diagnostic work at the National Radio Astronomy Observatory (NRAO) in Green Bank, West Virginia, and written curriculum for participating teachers. For the

Virginia Department of Education, Russ has served on various review committees. For the National Board for Professional Teaching Standards, he helped review portfolio items and test others. Russ earned his BA in Geology with a Minor in Archaeology from The College of Wooster in 2001, and his MS in Geology from The University of Cincinnati in 2003. Russ is a member of the Geological Society of America (GSA), the National Earth Science Teachers Association (NESTA), including serving as Mid-Atlantic Regional Director (2014-2016), the National Association of Geoscience Teachers (NAGT), the American Association for the Advancement of Science (AAAS), the National Science Teachers Association (NSTA), the Virginia Association of Science Teachers (VAST), including serving on the Board and as Earth Science Committee Chair (2015 to present), and the Virginia Earth Science Teachers Association (VESTA). He is married and has three children. 



Russ Kohrs, with students, testing their bone char filtration apparatus in Kenya.

Effortless (for instructors) Science Career Project

by Elizabeth Nagy-Shadman

Pasadena City College,
Pasadena, CA

We all want to increase the number of “majors” in our departments to ultimately meet STEM job demands of today and the near future. How many of you have been asked by a student who is enjoying your class, *What kinds of jobs are there in geology/oceanography/environmental science, etc.?* Here is an easy and effective way to get your non-major students to investigate the broad range of careers that involve the geosciences. The best part of it, in my opinion, is that students do the work and instructors primarily guide them along. Interested?

I have created a four-part career project that I have used for the past three semesters in all of my introductory geoscience classes at Pasadena City College. The four parts include (1) an on-line investigation of careers, (2) a team sharing and brainstorming activity, (3) an interview, and (4) a team class presentation.

Part 1. Students complete a worksheet for four different careers related to the course (i.e., careers related to the ocean in oceanography courses). The only stipulation is that all four careers must have different degree requirements (column headings in worksheet below). This cleverly familiarizes students with geoscience jobs for which they will be eligible after completing their two-year degree, while also exposing them to careers with higher degree requirements.

I provide students with a number of websites to start their investigations. For each of the four careers they must complete the first five rows of the worksheet and any two additional rows for each column. This is assigned as homework, and students typically report 30-60 minutes of time spent on this activity.

Part 2. During class students are put into teams of 3 and charged with the following tasks, due by the end of the allotted class time (45-60 minutes):

1. Verbally share the information from your Career Project Worksheet with your teammates (these have been collected, graded, and returned).
2. Together, rank the 12 careers from most to least desirable. Put the list on a piece of paper.
3. Write one paragraph for each of the top three careers in your ranking that explains why this career was more desirable than most of the others. (Note: since there are three people on a team, each person writes one paragraph).
4. Brainstorm and create a list of ten “interview questions” that you might ask someone who currently has this job. The questions should be designed to learn more about the job than what was found online. For example, “What is your best piece of advice for someone who wants to get this kind of job?” or “What are your favorite and least favorite aspects of your job?”

Part 3. After Part 2 is graded and returned we have a brief class discussion of good, informative interview questions. Every student is given instructions to carry out a brief interview with someone who currently has a job in one of the top three careers selected by their group. Interviews can be face-to-face, or via telephone or email. I give students no more than 3-4 weeks for this part, because I find that many of them will procrastinate no matter how much time I give them. On the due-date they must turn in a summary of the interview.

Part 4. The culminating activity returns students to their groups from Part 2. Together their team creates a poster “advertising” one of the careers that

| Career Project Worksheet | | | | |
|------------------------------|--|--------------------|-------------------|------------------------------|
| Information: | Minimum Degree → High school diploma and/or a certification diploma | Associate's degree | Bachelor's degree | Master's or Doctorate degree |
| Job title | | | | |
| Suggested major | | | | |
| Required skills | | | | |
| Starting salary/wage | | | | |
| Description of duties | | | | |
| Room for advancement? | | | | |
| Travel required? | | | | |
| Desk/computer vs. field time | | | | |
| Location (if applicable) | | | | |
| Other | | | | |

they investigated and for which at least one team member performed an interview. This is done entirely during class time so no preparation is necessary, although I tell students they can bring materials to add to their poster if they want. I give each team a “giant sticky note”, lots of markers, and about an hour. It consistently amazes me how much students get into this activity, and it definitely brings out the artists and the imaginative. Once the posters are complete and stuck onto the walls around the classroom, each group gives a brief presentation of their poster and describes highlights of what they found out about the career.

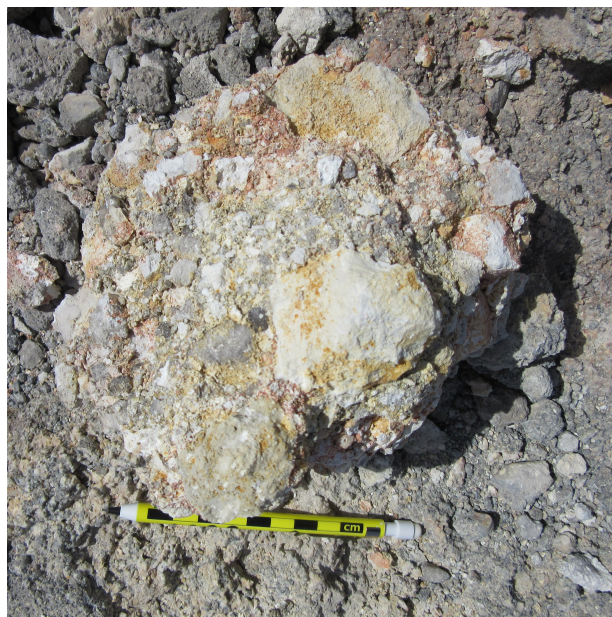


New career: Rock Blaster!

Most of my students are non-science majors. In addition to exposing students to geoscience careers with a range of degrees requirements, this project also familiarizes students with resources that they can use to explore any career. At the very least, students will start thinking a bit more about the end-game of their education: what are their career goals? How can they learn more? At the most, they might realize that their interest in geoscience can actually lead them to a viable career. 🏔️

Readers' Geo2YC Pencil Photographs

As always, we would love to share your awesome geology photos here in the newsletter – with one provision! Each photograph must include the quite indispensable Geo2YC pencil. We can count on Callan to always have a pencil shot available, but how about yours?



*With volcanic breccia on Vulcano, Aeolian Islands, Italy
by Callan Bentley*

If you have taken your Geo2YC pencil anywhere this past year, or even have a cool rock formation where you live or work that you can grab a photo of using the pencil as scale, please consider submitting it to the newsletter for publication. All we need is an approximate location. You are welcome to give coordinates if appropriate to do so. Please send a jpeg to the editor suki.smaglik@gmail.com. Please also include a caption for your image.

If you do not yet have a pencil, look out for an NAGT booth at next year's Earth Educators' Rendezvous. 🏔️

You can now follow us on
Twitter:



@geo2yc

Geo2YC Community Announcements & Items of Interest

If you have an opportunity that you would like to share with your colleagues and their students, please submit an announcement to the editor.

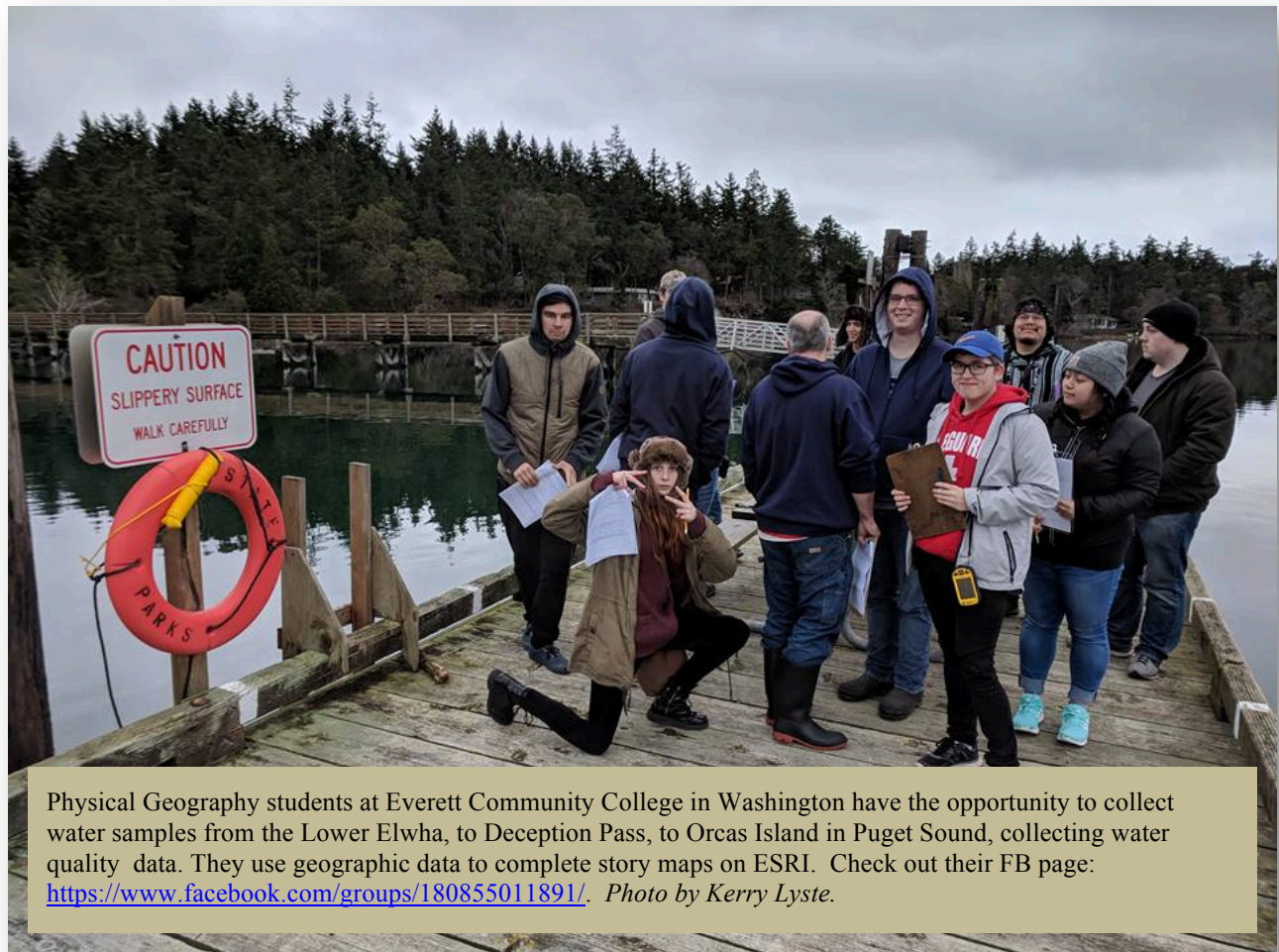
Undergraduate Research Opportunity: STEMSEAS

[STEMSEAS](#) (STEM Student Experiences Aboard Ships) is an NSF-Funded program that aims to provide 6-10 day exploratory experiences for undergraduates from diverse backgrounds aboard

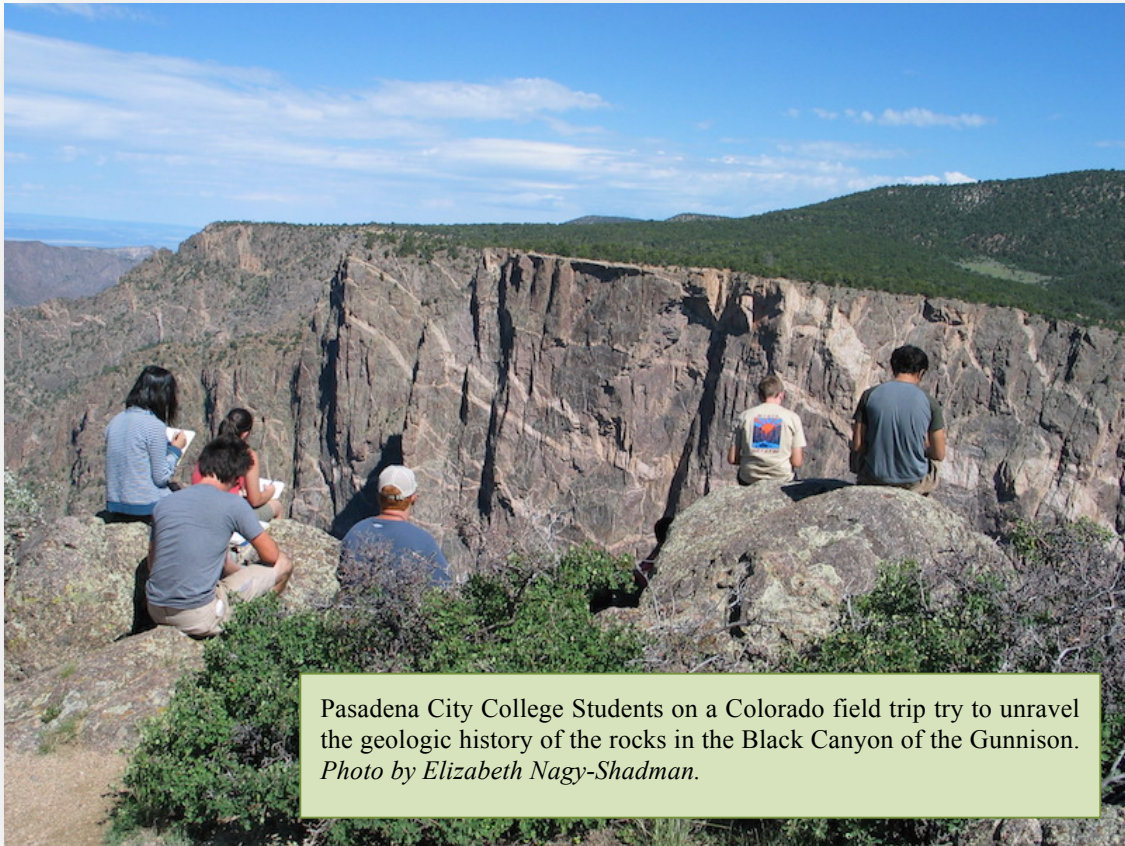
oceanographic research vessels. Students sail with faculty mentors, and engage in geoscience and oceanography activities while having fun (and experiencing life at sea). Two-year college students are a specific population that this program targets. In 2016, we had two-year college students on all of the excursions, one of which I had the great fortune to serve as faculty mentor and had a significant percent of students on the ship coming from two-year colleges (see previous article in [December 2016 newsletter](#)). This project was recently funded for another three years and has a rolling application deadline. Please encourage your students to apply today! And if you have any questions about the program, please don't hesitate to contact me. Kaatje Kraft (kkraft@whatcom.edu)

Geo2YC Gallery

The gallery is our creative space. Send a photo, poem, painting, etc. that you'd like to share, to the editor suki.smaglik@gmail.com. Please also include a caption for your image.



Physical Geography students at Everett Community College in Washington have the opportunity to collect water samples from the Lower Elwha, to Deception Pass, to Orcas Island in Puget Sound, collecting water quality data. They use geographic data to complete story maps on ESRI. Check out their FB page: <https://www.facebook.com/groups/180855011891/>. Photo by Kerry Lyste.



Pasadena City College Students on a Colorado field trip try to unravel the geologic history of the rocks in the Black Canyon of the Gunnison. *Photo by Elizabeth Nagy-Shadman.*



A group photo of all the 2YC participants on the Virginia Geological Field Conference, held in October 2017 in Charlottesville, Virginia. *Photo by Callan Bentlev*



Here's the full picture from which this Foundations volume banner is taken: The Red Desert of central Wyoming, Honeycomb Buttes in the foreground, with Continental Peak in the background. These variegated rocks are from the middle Eocene Wasatch Formation; interbedded fluvial mudstones, shales, sandstones, chert granules and ash, containing vertebrate fossils, such as turtles and crocodiles, as well as algal limestone. *Photo by Suki Smaglik*

Deadlines for future *Foundations* issues. Submit your stories, experiences, experiments, photos, awards, etc. to the editor sukismaglik@gmail.com anytime prior to each deadline.

- Friday, June 2
- Friday, Sept. 8
- Friday, December 8

Foundations, Vol. VII, 2018 editor:
Suki Smaglik, Yakima Valley College,
Yakima, WA

