NAGT Geo2YC Division

FOUNDATIONS

Newsletter of the Geo2YC division of the National Association of Geoscience Teachers
Volume III, Issue 1: February 2014

Are introductory geology textbooks a foreign language to students?

by Karen M. Kortz and Amber Caulkins
Community College of Rhode Island, and the College & University Research Collaborative (formerly CCRI)

I once read that introductory science textbooks have about as many vocabulary words in them as introductory foreign language textbooks. I was curious if this was true of college-level introductory geology textbooks. So, I asked one of my exceptional students if she was interested in working with me on a doing a little research on the number of vocabulary words in physical geology textbooks.

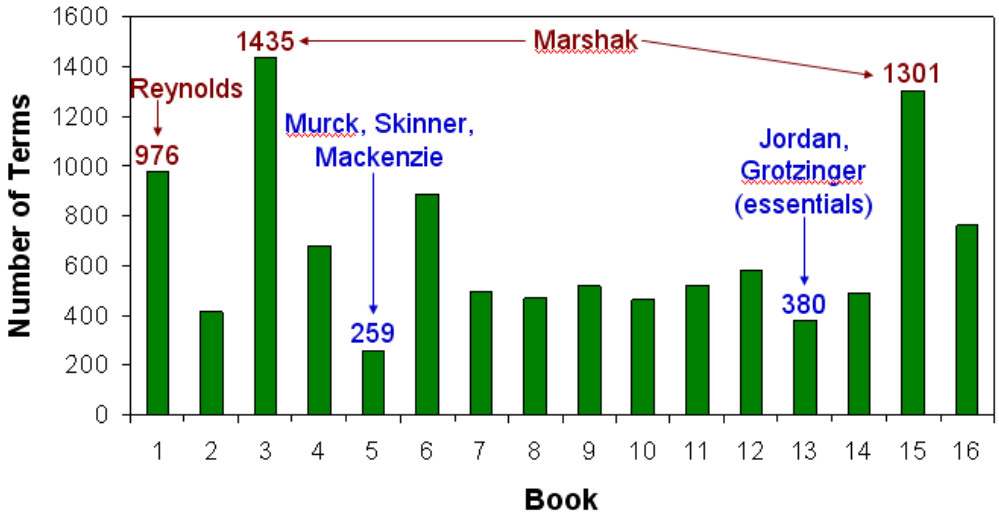
As geologists and instructors, we expect students to be able to use key vocabulary words in introductory geology courses in order to effectively communicate in the scientific field. The use of geologic vocabulary exposes students to the common language spoken by geologists. While this is true, it only works if the vocabulary that geologists use truly is consistent. Therefore, my student and I also wondered if there was agreement among introductory physical geology textbook authors on a common vocabulary for students in introductory physical geology courses.

To answer our questions, we decided to analyze the vocabulary words in 16 commonly used introductory physical geology textbooks by compiling the words in the glossary.

In our analysis, we found a considerable number of minor variations in terms between different textbooks, such as spacing (*e.g.*, rock slide vs. rockslide), hyphenation (*e.g.*, P-wave vs. P wave), and variations in spelling (*e.g.*, fiord vs. fjord). We combined those terms that were similar into a single common term; however, terms that had the same meaning but were not similarly written (*e.g.*, aquiclude and aquitard, or composite volcano and stratovolcano) were not combined and considered as separate terms.

After compiling terms in all 16 textbooks, we counted a total of 2877 different terms, with the number in each individual textbooks varying widely between 259 and 1,434 geologic terms, as shown in Figure 1.

Figure 1: The number of bolded words in each of the 16 physical geology textbooks analyzed. Selected textbooks are annotated.



Because textbook authors tended to use a fairly consistent language across difference versions of their textbooks (e.g. essentials versus full versions), we combined separate books written by the same authors into one author set. As a result, we narrowed down the 16 textbooks into 10 author sets.

Believe it or not, there is very little overlap between the bolded geology vocabulary used in different textbooks! As you can see in Figure 2, only 48 terms (1.7% of the total) were common to all 10 author sets. These 48 terms are listed in Table 1, and although most of these represent important concepts, we would argue that there is still a significant number that are not essential to understanding the language of geology. Another way to look at the lack of overlap is that 55% of all geologic terms were found in only one textbook author set, and only 16% of the terms were in 5 or more of the textbook author sets (out of 10).

Prior geoscience education research has argued that using vocabulary, especially before the concept is introduced, can hinder student learning. Students are often able to use geologic terms correctly in responses. However, when probed further, they cannot explain the concept behind the term. They memorize the term, and frequently think that that is enough.

Tying our research in with this previous research, we found that the number of vocabulary words in most current introductory geology textbooks will overwhelm students. We also found that there is not a common language of core terms that textbooks agree upon. This diversity indicates that textbook authors (and perhaps most geologists) have their own set of key terms, likely leading to difficulties for students to learn a common geologic language.

Therefore, we recommend that instructors limit the number of geologic terms that they present in an introductory class. Just because a word is in bold, that does not mean it's essential! We agree that some vocabulary is useful and essential, but introductory students should have an understanding of the concept before the terms are introduced.

This research was originally presented as a talk at GSA in 2011 (GSA Abstract 265-11).

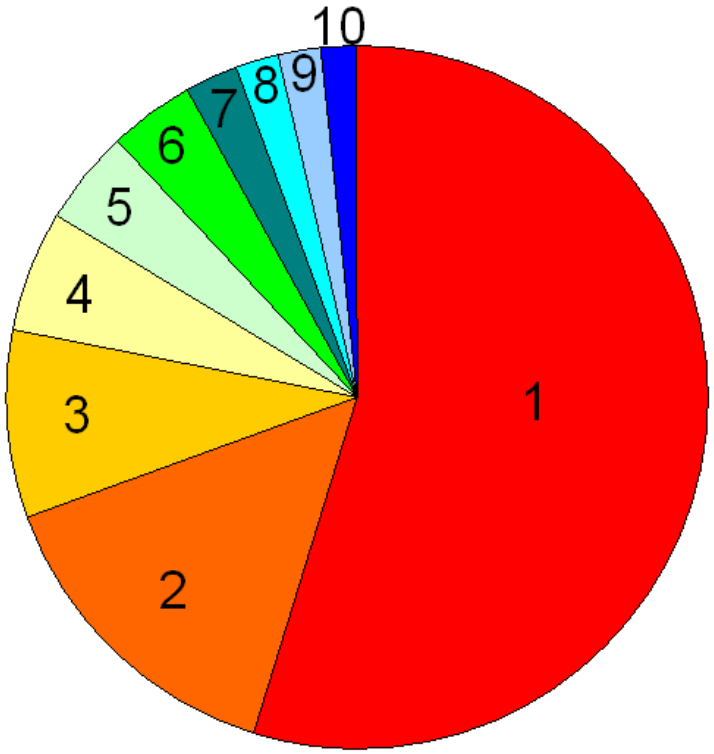
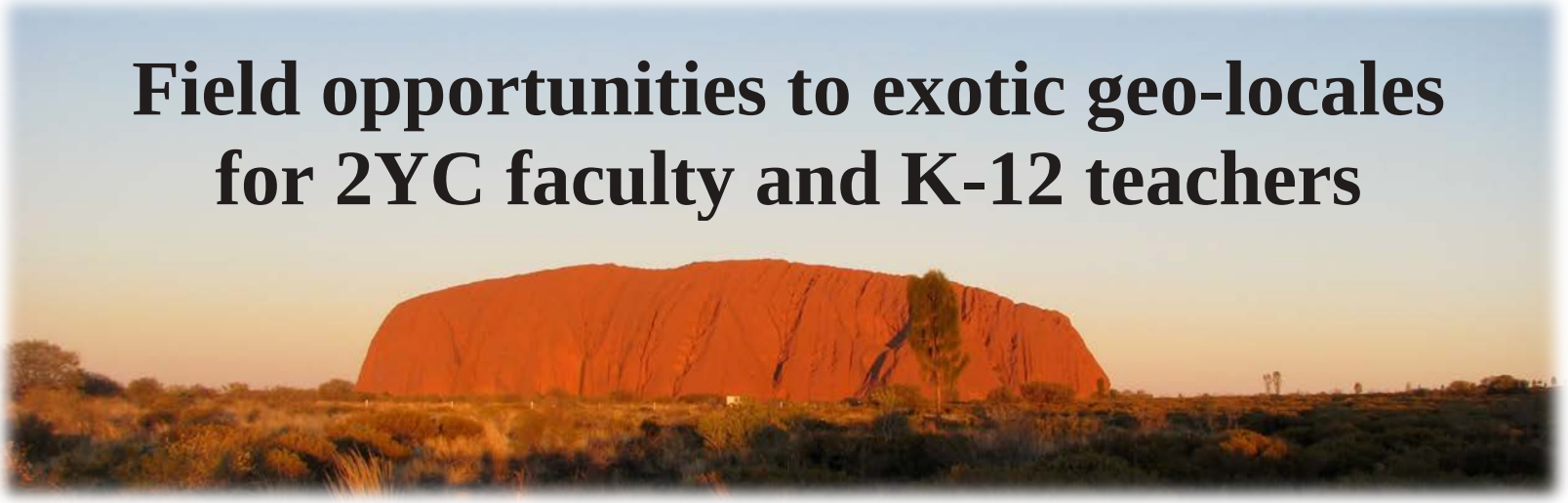


Figure 2: Pie chart showing the number of author sets in which each of the 2877 terms is found. For example, 55% of terms are found in only 1 author set.

Table 1: The 48 terms common to all author sets

abrasion	longshore current
anticline	magma
barrier island	mantle
beach	metamorphic rock
chemical weathering	mineral
contact metamorphism	normal fault
creep	paleomagnetism
crust	permeability
delta	plate tectonics
dip	porosity
epicenter	regional metamorphism
fault	reverse fault
floodplain	rock cycle
focus	seafloor spreading
fossil	sedimentary rock
geology	shield volcano
glacier	stress
half-life	strike
hypothesis	strike-slip fault
igneous rock	surface wave
joint	syncline
lava	thrust fault
lithification	unconformity
lithosphere	volcano

Field opportunities to exotic geo-locales for 2YC faculty and K-12 teachers



by Gary Lewis and Davida Buehler
Geological Society of America

Are you interested in learning more about in-field teaching methods for students with little or no geoscience background? Do you need new ways to create a classroom that is engaging for your students? Do you enjoy getting out into the field to study geology first hand? Then consider joining GSA on one of our GeoVentures or Field Camps this summer.

This summer, GSA is running several GeoVentures and Field Camps for K-12 and Two-Year College Educators. Destinations include Australia (2 trips), Hawaii, the Illinois Basin, Rocky Mountain (Colorado) and Mammoth Cave. Each trip takes you to incredible geoscience sites and many take you to sites that you would not be able to visit without being with GSA.

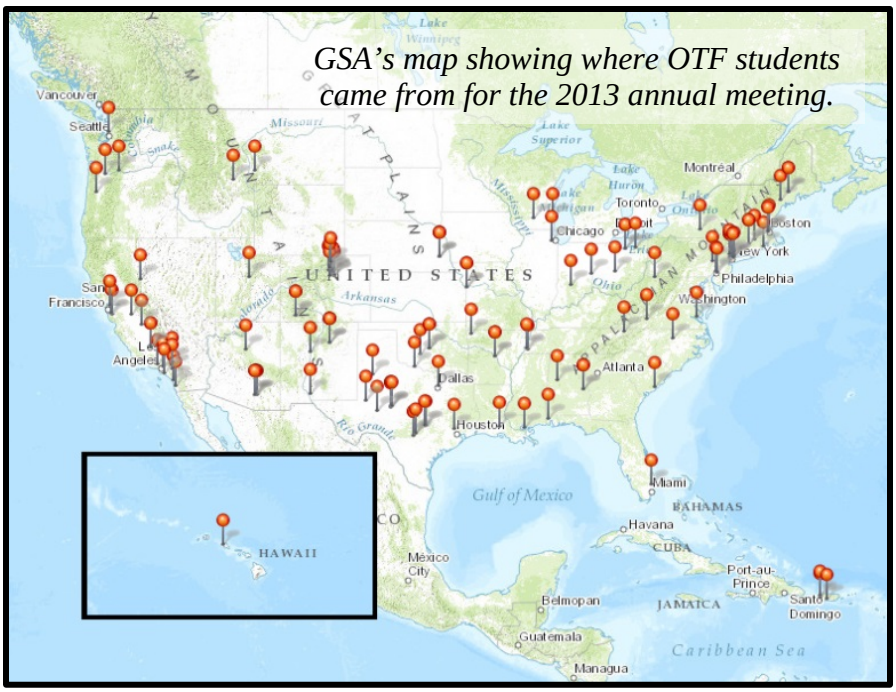
While these trips are designed for K-12 teachers, 2 Year College faculty have much to gain by participating in a GeoVenture or Field Camp. These trips are excellent for faculty who are looking to build stronger links with K-12 teachers. You'll also experience first-hand, teaching methods that work well with students who have little or no geoscience background and you'll learn new ways to hook those difficult to reach students.

We invite you to join us in the field this summer. Visit www.geoventures.org for more information. For questions on the Australia or Hawaii trips, please email Gary Lewis at glewis@geosociety.org. For questions on the Field Camps, please email Davida Buehler at dbuehler@geosociety.org. We hope to see you in the field!

A look at 2YC student registration at GSA annual meetings

by Callan Bentley
Northern Virginia Community College

Last year, the officers of Geo2YC asked an interesting question during one of our meetings. While discussing the Geological Society of America's new "On To the Future" campaign, the question was raised as to how many two-year college students attended the GSA annual meeting. "On To the Future" is a grassroots initiative of GSA to provide partial-funding for students from diverse backgrounds to attend their first GSA Annual Meeting. Geo2YC donated $125 to this initiative, in honor of GSA's 125th anniversary and specifically for the inclusion of a two-year college student (see article by Suzanne Metlay in the last issue of *Geo2YC Foundations*).



GSA's map showing where OTF students came from for the 2013 annual meeting.

In the February 2014 issue of *GSA Today*, GSA Foundation President Geoff Feiss noted that 125 students were indeed served by the initiative. The OTF website features a map showing where they all came from (reproduced here).

We wondered what the baseline numbers were for students from two-year colleges. We asked GSA for access to the registration data for the past 5 years of annual meetings. GSA willingly shared this information with us in the form of a spreadsheet containing first names, last names, institutional affiliation, and which meeting they were registered for. But between one thing and another, the Geo2YC person in charge of reviewing the data (*your humble author*) didn't find time to write it up. By the time it rose back on the radar, the 2013 Denver meeting (the 125th anniversary meeting for which OTF was founded) had taken place, and so GSA added a 6th year's data to the mix.

In the revised spreadsheet, there were **8075** student registrations over the past 6 GSA meetings. Of those, 7329 (almost 91%) did not enter an institutional affiliation. Of those who did claim a school, only 13 listed a junior or community college as their institution, and 4 of those counts were the same person (attending 4 different meetings over the 6 years of this 'study'). Furthermore, I'm aware that this person is in fact a faculty member, not a student. So really, **only 9 students** registered for GSA's annual meeting with an explicit declaration of their 2YC affiliation. That's 0.1% of all student registrants. That's… a very small number.

Incidentally, among the 8075 student registrants, there were 16 high school affiliations noted during the same period.

What lessons can we take from this? I would encourage students not to skip any steps in the registration process. If we are to keep track of how many 2YC students attend national meetings, we need them to declare who they are.

Report on 'Summit on the Future of Undergraduate Geoscience Education'

by David Voorhees, Lynsey LeMay, and Kaatje Kraft
Waubonsee Community College, Thomas Nelson Community College, and Mesa Community College

The University of Texas at Austin hosted the National Science Foundation sponsored *Summit on the Future of Undergraduate Geoscience Education* from 10 to 12 January 2014. Sharon Mosher, Dean of the Jackson School of Geoscience, and her 'burnt orange minions' pulled off a nearly logistically flawless 3-day summit, with over 200 geoscientists representing 2YC's, 4YC's, R1 institutions, professional societies and organizations, as well as industry professionals. It was organized to begin developing a community consensus on topics critical to geoscience undergraduate education and to identify the next steps needed to implement collective recommendations.

The summit was organized into three themed sessions: curriculum, pedagogy, and broadening participation in undergraduate geosciences. Each session started with a keynote speaker, panel discussions from participants from the summit (including our very own past-president Lynsey LeMay), and breakout sessions that resulted in report-outs from eight different working groups. Faculty from 2YCs were assured a strong voice by distributing faculty in several sets of break-out groups. Some of the common themes that emerged were a general consensus that there was a need for a reform in undergraduate geoscience curriculum, that effective pedagogy can support student learning and development of necessary skills and that there was a need to provide opportunities to broaden participation and diversity

in the geosciences. Unfortunately, this last issue was condensed into a shorter interval of time as the previous two topics, especially since the 2YC geoscience community has a significant role, and experience in a broad and diverse student population.

Going forward, the Summit Organizers will be crafting a document, which is to be reviewed by all Summit participants that will summarize the goals and results. It was noted that similar summits and workshops have taken place in decades past, and it is hoped that this Summit will not fade from memory as have the others. It was then pointed out during Mosher's final presentation that the geoscience education community has made significant progress in the last 2 decades, even though it may seem we have many long roads ahead of us. Additionally, it is interesting to note that a similar document produced by a similar effort in the Biological Community, (Brewer and Smith, 2009) has been actively used by some of the 2YC Biological community (Voorhees, pers. comm, 2014).

The campus of the University of Texas at Austin

Thanks to the efforts of Joshua Villalobos, of El Paso Community College, and a member of the Summit Organizing Committee, the 2YC geoscience community had a significant and vocal representation. Of the 200 geoscientists participating, over 20 were from the 2YC geoscience community. It was encouraging to see a strong 2YC presence, it inspired us to discuss our message amongst ourselves, and voice our concerns to the geoscience community at large. We were provided a significant voice in the discussions, and we all worked hard to represent the needs and realities of our students. Most of the formative discussions at the Summit occurred in the small workgroups. The strong voice of the 2YC geoscience community was well received in some groups, while in other groups, the insight provided by the 2YC participants was dismissed. The strong voice of the 2YC geoscience community in these broad discussions, both at the Summit and in the future, is critical, because it was clear from comments of panel members and in some of the working groups, that there are still many 4YC geoscience instructors who do not have a clear understanding of the 2YC model or the 2YC role in the developing and mentoring of future geoscientists and geoscience education. This summit provided a forum for fruitful conversations and networking which will be critical for the success of geoscience education in 2YC's and 4YC's, and the transitions between them.

The 2YC participants are also very appreciative for the generous full support offered by the Organizing Committee and NSF to attend the Summit, without which our participation would not have been possible. The complete agenda, videos of all presentations and other supporting documents, are available at http://www.jsg.utexas.edu/events/future-of-geoscience-undergraduate-education/.

Reference:
Brewer, C. A. and Smith, D, 2009, Vision and change in Undergraduate education: A call to action, AAAS, 100 p.; available at www.visionandchange.org

JACKSON SCHOOL OF GEOSCIENCES

Outstanding Adjunct Faculty Award: Dr. Rebecca Carmody of Howard Community College

by Kaatje Kraft and Alison Beauregard
Mesa Community College and Northwest Florida State College

We are proud to announce the current Outstanding Adjunct Faculty awardee for the Geo2YC Division of NAGT. This cycle was a highly competitive round with many qualified candidates. The OAFA committee felt that Dr. Rebecca Carmody presented a clear commitment to her students, an exceptional willingness to teach in all possible formats and an openness to new and different preps. Dr. Carmody was nominated by Sharon Lyon at Howard Community College in Columbia, MD.

Sharon wrote the following submission, "Dr. Carmody has been teaching at Howard Community College since Fall 2008. Prior to coming to HCC, she taught Earth Science at Chelsea School, a school for children with learning differences. At HCC, Dr. Carmody has taught Physical Geology, Earth and Space Science, Meteorology, Technical Physical Science lab, and Inorganic Chemistry lab. This semester she has taken over the Astronomy lecture and lab online courses. Dr. Carmody has taught face-to-face, hybrid and online sections, with multiple preps during every semester. She has taught day, evening and Saturday classes. She came to HCC as a student in the online astronomy course to update her teaching certification, and while she has been an instructor at HCC she has taken meteorology and chemistry courses as refreshers. Dr. Carmody is an extremely dedicated and hard-working instructor. She has developed and led geology fieldtrips, including trips to the Woodstock Dome, the Smithsonian National Museum of Natural History, and the Prince Georges County Dinosaur Park. She has developed Sky Watch and Planetarium exercises, and has spent many (cold) evenings on the student patio at HCC and at Alpha Ridge Park in Howard County, teaching students how to identify celestial objects and use a telescope. Dr. Carmody is highly respected by her students and her student reviews are consistently outstanding. She is ready and willing to step in when needed and works tirelessly for the good of the Science, Engineering & Technology Division at Howard Community College."

Congratulations to Rebecca from all of us at the executive council of Geo2YC. Our programs wouldn't be what they are without our part-time faculty and we're glad to be able to recognize Rebecca in the amazing efforts she has contributed toward her department. She truly represents what makes the job of an adjunct faculty such a challenge, and why we are so fortunate to have such great colleagues in our community. We are pleased to award Rebecca with an honorary membership to the Geo2YC division of NAGT for 2014 and she will be in the pool to be our annual outstanding adjunct faculty awardee to be announced at GSA 2014.

Dr. Rebecca Carmody (on the left), her nominator Professor Sharon Lyon (center) and Professor Jennifer Kling (right) at the April 2011 Howard Astronomical League Star Party at Alpha Ridge Park. As you can see, we were dressed for the cold! All in the name of science!

If you know of one of your adjunct faculty who deserves recognition, please nominate them at: http://nagt.org/nagt/divisions/2yc/oafa_nomination.html.

Reflections from the Wonder Twins:

Geo2YC President and VP contemplate you can get involved with making our division great

by Merry Wilson and Ben Wolfe
Scottsdale Community College and Metropolitan Community College

Many discussions I have with members of the Geo2YC Division start the same way. We reflect on how far we've come as an organization, and how our emerging presence at national conferences is heartening. Ben Wolfe, our current Vice-President, told me how isolated and awkward he felt at GSA in 2007, and alternately how supported he felt with the attendance and participation of 2YC faculty at GSA in 2013. Honestly, at the end of it, I couldn't remember if it was his story or mine, since I know that I clung to the few 2YC faculty I found at GSA in 2008 and was delighted at how many new faces I saw this year.


Merry

As always, my conversation with Ben diverged into what Geo2YC could do for our members, but also what our members could do to strengthen the stance of our organization. We've been faced with a new and exciting problem: People want to know how to get involved! So, we put our heads together, looked through past survey results, and came up with a list.

So, look no further, here's how:

1. Newsletter: **Contribute to *Foundations*!** Tell us what you're working on and how it is going. We support all types of geoscience educational endeavors, so please tell us about yours. Contact our *Foundations* Editor, Callan Bentley, at cbentley@nvcc.edu
2. **Leadership:** We have many positions on the 2YC Board that are up for election this year, and we'd love to infuse those positions with fresh and diverse energies. In particular, we need:
   - **Vice-President:** Take over the helm of NAGT 2YC, starting with VP in 2014! Help us direct the future of this Division.
   - **Secretary/Treasurer:** Handle the money and record minutes during Division and Board Meetings.
   - **Newsletter Editor:** Prepare and produce our *Foundations* Newsletter. If you are overwhelmed but interested in this opportunity, consider becoming a co-Editor!
   - **Webmaster:** Update our website. Help us to create a dynamic and interactive medium for our Division!
   - **Archivist:** Help us to maintain our records.

   To express interest for a position or nominate someone you know, please contact our Past-President, Lynsey Lemay, at lemayl@tncc.edu
3. **Position Papers:** We are currently drafting two position papers, one on the necessity and importance of geosciences, and one on the importance of fieldwork in 2YC programs. Would you like to help with these? What are the topics that YOU care about? Got an idea? Contact Merry Wilson at merry.wilson@scottsdalecc.edu
4. **Support our Adjuncts.** We know that adjuncts represent a large portion of our community. How can we better support them? Do you have an idea or would you like to nominate an Outstanding Adjunct for our yearly award? Contact Allison Beauregard at beaurega@nwfsc.edu
5. **Get involved in professional development** opportunities! We are working on a Webinar series in conjunction with NASA. Help us develop this or let us know your interest in attending. Contact Suzanne Metlay at suzanne.metlay@wgu.edu Additionally, check

out opportunities through: Supporting and Advancing Geoscience Education in Two-Year Colleges (SAGE 2YC) http://serc.carleton.edu/sage2yc/index.html

6. **Attend a Regional Meeting.** On a cheery February day in the Polar Vortex, Ben reflected on 2YC faculty attendance at National vs. Regional meetings. Here's what he had to say:

We have become very good as an organization fostering networking opportunities and maintaining a large presences at big national meetings. However, for many of our fellow geoscience 2YC faculty the financial burden and lack of institutional support to regularly attend such meetings makes them cost prohibitive. One area I see for Geo2YC as potential growth is increased presence at the regional and local meeting scale.

Ben

In an attempt to put off the trek to my car, I decided to compare, in a very unscientific way, the number of abstracts by community college faculty presented at the 2013 GSA annual meeting versus the number of abstracts presented at the 2013 GSA section meetings. Geoscience community college faculty are very active at the GSA annual meeting with a large number, I stopped counting when I reached 35, submitting abstracts with main or co-authors from 2YCs. Compared with the numbers of similar abstracts at 2013 GSA sectional meetings, the differences are striking. For example, the Northeastern section tops the list with most abstracts with authors from 2Ycs at five followed by the Cordilleran section at four. The North Central section had just two authors and the Southeastern one. The Rocky Mountain and South Central section both had a grand total of zero abstracts with at least one 2YC author. It appears, just based on number of abstracts presented, that participation is much lower at these types of meetings than at national conferences. While I know this does not account for 2YC attendees to these section meetings that did not submit an abstract, and I am confident that some 2YC faculty are regular attenders of sectional meetings, what I am suggesting is that these sectional meetings provide a fertile opportunity for Geo2YC to become more involved in a higher profile way.

Based on Ben's exhaustive research (and the fact he does all my writing for me) I whole-heartedly agree with his conclusion that regional meetings are a perfect opportunity to raise the profile of the Geo2YC community and strengthen networks with regional and local four-year partner institutions. Not only do section meetings provide easy professional development opportunities for 2YC faculty to connect with their discipline, often these meetings are easier to attend as they are closer to their home institutions and generally cost much less than travel to the annual meetings. More importantly, they are great professional development opportunities for adjunct faculty who lack support for travel. Consider these:

2014 GSA South-Central Section Meeting
17–18 March 2014
Fayetteville, Arkansas, USA

2014 GSA Northeastern Section Meeting
23–25 March 2014
Lancaster, Pennsylvania, USA

2014 GSA Southeastern Section Meeting
10–11 April 2014
Blacksburg, Virginia, USA

2014 GSA North-Central Section Meeting
24–25 April 2014
Lincoln, Nebraska, USA

2014 Rocky Mountain Meeting and Cordilleran Joint Section Meeting
19–21 May 2014
Bozeman, Montana, USA

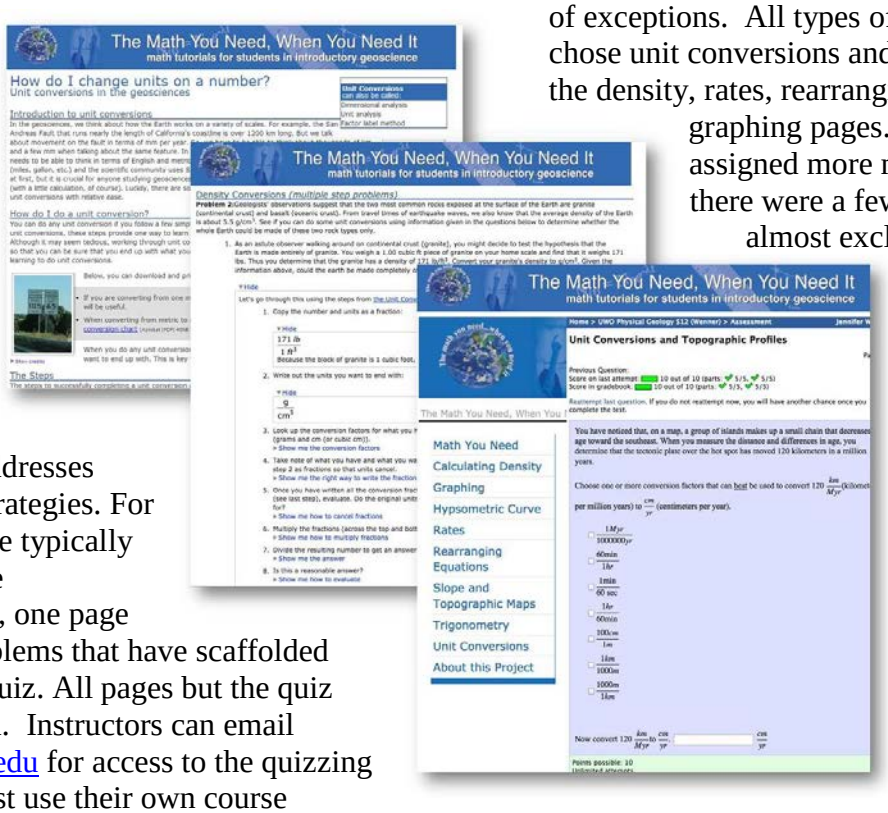
2014 Far West and Southwest Joint Section Meeting
30 May – 1 June 2014
Grand Canyon, Arizona, USA

In summary, there are plenty of opportunities to network, attain professional development, and contribute to our Geo2YC mission. Come and play with us, as we will all benefit from your experience, energy, and ideas. Get involved! And, as always, let us know what you need. Thanks.

Four Years of "The Math You Need"

by Eric Baer
Highline Community College

The" Math You Need, When You Need It" (http://serc.carleton.edu/mathyouneed/) (TMYN) is a set of online modules designed to support students with the mathematics required to be successful in introductory geoscience courses. Each module addresses a quantitative technique such as rearranging equations or unit conversions within various geoscience contexts.



Each module consists of several webpages – one for instructors that indicates student learning outcomes, links to helpful resources, and addresses some teaching strategies. For students, there are typically three pages – one explanation page, one page with sample problems that have scaffolded solutions and a quiz. All pages but the quiz are free and open. Instructors can email ebaer@highline.edu for access to the quizzing site, but many just use their own course management software to assess student mastery of the module topics.

Over the last 4 years almost 50 institutions have participated in a broad study of the effectiveness of TMYN. About half of the institutions were two-year colleges; the rest ranged from large research universities to small selective liberal arts colleges to regional universities from. Over 5000 students were enrolled in over 100 courses that used TMYN. One of the more interesting results from our first 3 years is that, at least in terms of quantitative skills, there was no large difference between two-year college (2YC) students and four year college (4YC) students as a whole. In many of the courses we administered equivalent pre and posttests to measure changes in quantitative skills. We have analyzed data from 88 different courses and the average pre-test score was 62% for the 42 classes at 2YCs and 65% for the 46 classes in 4YCs. The average posttest score was 76% in TYCs and 79% at 4YCs. One thing that we did notice is that there was higher variability in the 2YC data; for instance the pretest class average in 2YCs ranged from 36% to 88% (StD=13%) while the range was 45% to 84% (StD=10%) in 4YC classrooms.

We also did not see a significant difference in the types of modules instructors assigned, with a couple of exceptions. All types of schools most commonly chose unit conversions and then chose a few from the density, rates, rearranging equations and graphing pages. On the whole 2YCs assigned more modules than 4YCs, and there were a few modules that were used almost exclusively by 2YCs – the hypsometric curve, and plotting points modules most notably.

So in the end, while many instructors and students might think there is a large difference between intro-ductory geoscience courses at 2YCs and those at 4YCs, analysis of data from the "Math You Need, When You Need It" project indicates that at least in the small niche of supporting students in their quantitative skills, this might not be entirely true. Perhaps this is because students in all types of institutions struggle to apply math in a new context, an example of applying knowledge and skills across disciplinary boundaries. Many researchers have shown that this transfer is very difficult; the problem isn't the level of math that a student has had or their understanding of the geology – it is bridging the gap between them. We hope "The Math You Need. When You Need It" resources are helpful to all in helping students to bridge this gap and be more successful in their geoscience courses.

NASA-NAGT Earth Education Resources for Two-Year College Faculty *(EarthEd2YC)*

by Suzanne Metlay
Western Governors University

NASA's Earth Forum and NAGT's Geo2YC are launching a new series of webinars for geoscience faculty at two-year colleges, called EarthEd2YC. Each webinar includes 30 minutes of professional development for full-time and part-time faculty seeking educational resources and other guidance from NASA's Science Mission Directorate (SMD) Earth Science Education and Public Outreach Forum(SMD E/PO) and NAGT's Geosciences for Two-Year Colleges (Geo2YC) professional division.

Beginning March 7, 2014, live webinars will be on the first Friday of each month at 1:00pm Eastern Time (10:00am Pacific Time). Each live 20 minute presentation will be followed by 10 minutes of discussion, with real time chat throughout. All resources discussed in the webinars will be made available online. The webinars will be recorded and made available for later viewing. The initial series will run through August with possible renewal for Fall 2014.

The first webinar topics scheduled for discussion were identified through a 2012-2013 survey of 2YC faculty conducted by the NASA SMD E/PO Higher Education Working Group (HEWG). We want to include your ideas for EarthEd2YC topics - please contact Russanne Low at rusty_low@strategies.org

Upcoming Discussions:

March 7: Launch of EarthEd2YC-Professional Development series – Classroom Connections to NASA Educational Resources

Facilitator: Russanne Low, NASA Earth Forum, Institute for Global Environmental Strategies (IGES)
Summary: EarthEd2YC start up coincides closely with the launch of the international satellite mission, Global Precipitation Measurement (GPM). This session will introduce the webinar series and provide take-home resources to support Earth system, weather and climate education, connecting your class with the excitement of this high profile satellite mission.

April 4: *Online Earth & Space Sciences: Active Learning Opportunities*
Facilitator: Suzanne Metlay, NAGT Geo2YC, Western Governors University

Future Topics in Series

- It Takes a Village to Build an Online Course: NASA Resources and Online Pedagogy
- Democratization of Science: Using Citizen Science Data in Classrooms
- Making the Case for Excellence: Teaching Evaluation and Assessment

Sign in information:
We will be using Zoom – if you do not already have this software on your computer, please take a moment to visit http://zoom.us to download and install the app (this should take less than five minutes). A Zoom account is free.

Join from a PC, Mac, IPad, IPhone or Android Device:
Please click this URL to join.
https://zoom.us/j/426290902
Or, go to https://zoom.us/join and enter meeting ID: 426 290 902

Some information to keep in mind:

- Please use your first and last name when identifying yourself in Zoom.
- You will automatically be muted upon joining this session.
- Please turn on your video, it makes a much more interesting webinar.
- (Please note – if you are connecting with a computer, there is no need to also dial in. Zoom runs audio through the internet connection)

Phone Dial in only: +1 (415) 762-9988 or +1 (646) 568-7788
Meeting ID: 426 290 902
Participant ID: Shown after joining the meeting
International numbers available:
https://zoom.us/zoomconference

2014 Local Workshops from SAGE2YC

Kansas City, MO
From the classroom to the workforce: Increasing student success in the geosciences
Friday, March 14, 2014. 8:00 am - 5:00 pm
Metropolitan Community College - Penn Valley
Conveners: *Ben Wolfe and Todd Martin*

NYC/Long Island
Supporting Student Success in the Geosciences at 2-Year Colleges
Friday, March 14, 2014. 8:00 am - 4:00 pm
Nassau Community College
Conveners: *JoAnn Thissen, Tracy Imperato, Sean Tvelia, and Joan Horn*

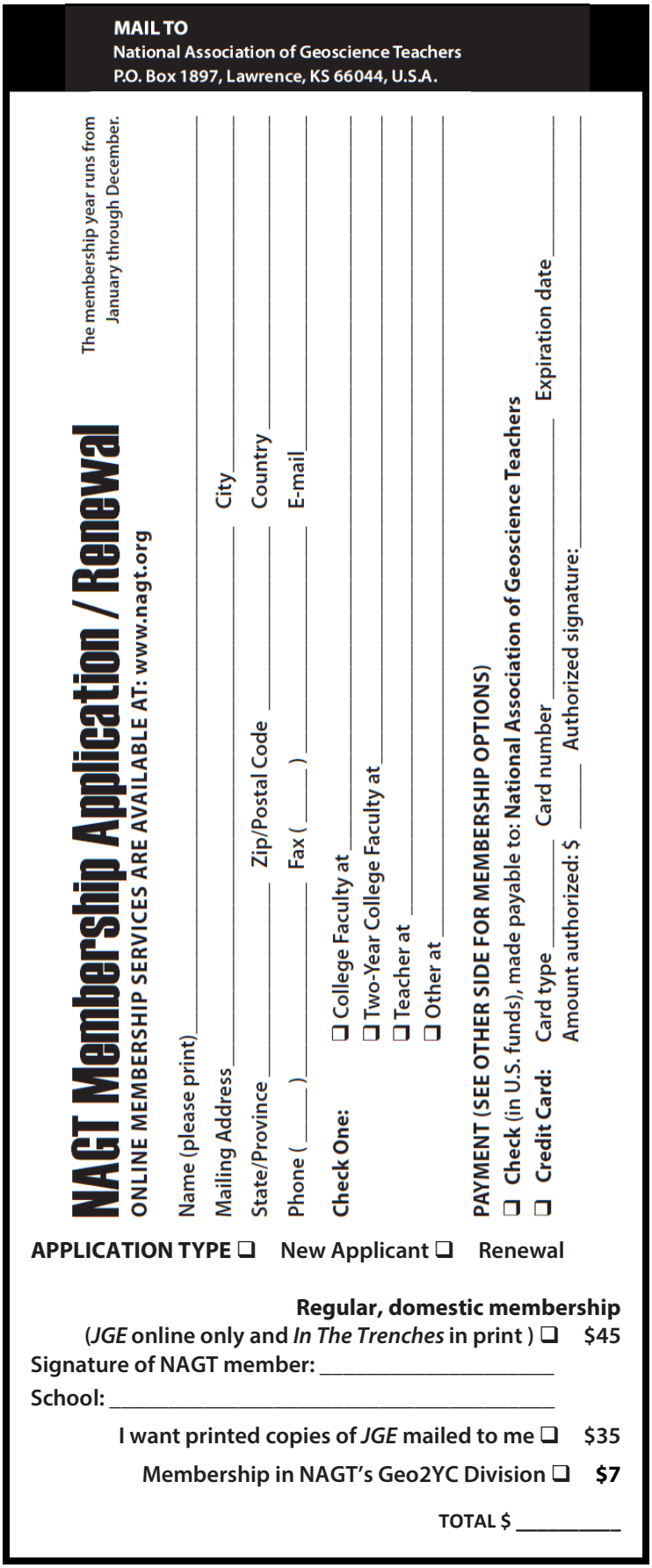
Portland, OR
Using engaging experiences to craft student success in the earth sciences
Saturday, May 3, 2014
Portland Community College
Conveners: *Eriks Puris and Daina Hardisty*

Raleigh, NC
Helping Two-Year College Students Succeed in Geoscience Courses
Tuesday, March 4, 2014. 8:00 am - 4:00 pm
Wake Technical College
Conveners: *Gretchen Miller and Adrianne Leinbach*

Richmond, VA
Supporting the Whole Student: Strategies for Success in the Classroom, Transferring, and Finding Professional Opportunities
Friday, May 23, 2014. 8:00 am - 4:00 pm
Reynolds Community College
Conveners: *Karen Layou, Peter Berquist, Lynsey LeMay, and Brett Dolan*

Registration is currently open for the KC and NYC workshops.

The schedule can be found at the following link: http://serc.carleton.edu/sage2yc/workshops.html



MAIL TO
National Association of Geoscience Teachers
P.O. Box 1897, Lawrence, KS 66044, U.S.A.

The membership year runs from January through December.

NAGT Membership Application / Renewal
ONLINE MEMBERSHIP SERVICES ARE AVAILABLE AT: www.nagt.org

Name (please print) _____
Mailing Address _____ City _____
State/Province _____ Zip/Postal Code _____ Country _____
Phone (____) _____ Fax (____) _____ E-mail _____

Check One:
❑ College Faculty at _____
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❑ Teacher at _____
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PAYMENT (SEE OTHER SIDE FOR MEMBERSHIP OPTIONS)
❑ **Check** (in U.S. funds), made payable to: **National Association of Geoscience Teachers**
❑ **Credit Card:** Card type _____ Card number _____ Expiration date _____
Amount authorized: $ _____ Authorized signature: _____

APPLICATION TYPE ❑ New Applicant ❑ Renewal

Regular, domestic membership
(*JGE* online only and *In The Trenches* in print) ❑ $45
Signature of NAGT member: _____
School: _____
I want printed copies of *JGE* mailed to me ❑ $35
Membership in NAGT's Geo2YC Division ❑ **$7**

TOTAL $ _____

FOUNDATIONS is edited by Callan Bentley, Northern Virginia Community College. Please get in touch with your feedback: cbentley@nvcc.edu