**Work to be Done**

* Start building pages on molarity and molality
* Write JavaScript or PHP function that uses arrays and Boolean logic to calculate significant figures
* Finish programming the registration and login functionality
* Write function that incorporates the Stripe API for subscription functionality.
* Use screen capture software to make videos demonstrating how to use each of the website tools
* Use screen capture software to make videos containing more in-depth lessons of the concepts discussed
* Write media queries so the website is responsive when used on mobile phones and tablets
* Editing for grammar and clarity
* Create randomly generated practice tests for each subject area
* Lots of work on the stoichiometry page
* Finish with the gas law common problems
* Make buttons to jump from problems -> unit converters -> same problem
  + Make each button disappear when it is clicked
* Make two sections permanently open for everyone
  + Make the rest appear for two weeks after registering
  + Make them lock after two week period until subscription is purchased
* Pay some artists to draw relevant images to go with each section
  + Find a good, consistent spot to embed the images
* Add media queries for when desktops and laptops are using half the screen for the webpage

**Competitors**

***Aus-E-Tute***

This website was started in 2000. It has a lot of text lessons. However, the website is not easy on the eyes, and it does not provide the greatest ease of navigation. I can explain the concepts far more concisely and with greater clarity. They are great about providing practice problems for the concepts, and it is an idea that should be utilized more. Their application lacks the power that mine has through its JavaScript. It seems that the application does possess question walkthrough capability, although the extent is unknown. My application must outperform theirs in terms of the power of its functionality and ease of use. In addition to the poor navigation capability, the website does not look good on a cell phone and the advertisements are obnoxiously obtrusive. It only costs 50 AUS per year, but you have to pay for a year up front instead of month to month. They have existed for two-thirds of my life, so there is a lot of content. However, it seems cluttered. There is a lot of wasted movement. I have covered a massive amount of ground in six weeks. It won’t take long to have a greater range of content than Aus-E-Tute that is more succinctly written but accompanied by in-depth videos for those who want more. This is the main competition. However, it was clearly designed for a younger audience. Whereas this application is meant primarily for college students. They offer all of the base, text tutorial content for free. A similar method could be used on chemistrytrainer, and paid users would get video lessons, practice problems, and common problem calculators. However, two weeks of full access for free upon registering will be the initial plan. This will be more straightforward and efficient. Chemistry trainer has a superior navigation structure, which will ensure that the website is easy to navigate as soon as new users arrive.

I can make my chemical structures and reactions look SUBSTANTIALLY better using latex. Seriously, these guys have been going for twenty years, they have a lot of data, but it is written and structured like an anachronistic textbook, not a legitimate web application.

**Chem1.com**

This website is more like a free chemistry textbook. It is actually pretty cool and is something I would have loved to have known about before I actually started getting my own textbooks. However, this website and chemistry trainer operate in two very different scopes. My application should substantially mitigate the amount of time a student needs to use their books to learn concepts. Some of the links are dead though. It reminds me of the old internet.

**LearnChem.net**

This is another website that has quite a bit of free information. However, it also feels cluttered and lacks the ease of navigation that chemistry trainer offer. A lot of the content in this website is not sectioned off in a way that makes it easy to search through or comfortable to read. It offers practice tests and quizzes but does not seem to offer any functionality that works through problems step-by-step. Some of the buttons do not work. This feels more like a chemistry data dump than something that can actually be used to automate training a lot people in the ways of chemistry.

**Chemcollective.org**

This website provides videos to go along with their text lessons. The overall amount of content seems decent, but nothing that cannot be matched in the coming weeks now that the foundation of my application is complete and proven. One thing to take note of are the virtual labs offered. There is a ton of content there that seems very well done. I can attempt to recreate all the labs I did during my chemistry studies.

**Khan Academy**

**How Many Stem Majors in the United States?**

According to Statista, in 2018-2019 412,894 STEM bachelor’s degrees were awarded in the United States. 89,075 STEM certificates were awarded that were considered to be below the associate degree level. Finally, 86,830 associate degrees in STEM were awarded. There were 588,799 STEM degrees or certificates granted in the United States in the 2018-2019 academic year.

Source: https://www.statista.com/statistics/828915/number-of-stem-degrees-awarded-in-the-us-by-degree-level/

**How Many Stem Majors in Europe?**

According to EuroStat, there were approximately 513.5 million citizens in the European Union in 2019. Eurostat data also indicates that for every 1000 citizens in the EU, approximately 10 graduate with a bachelor’s degree equivalent in STEM. When dividing the total population by 1000, one gets a value of 513,500 individual thousands and approximately ten people get a degree in STEM for each one of those 513,500 instances of 1000 citizens. This results in a value 5,135,000 people getting a STEM bachelor’s degree in the EU in 2019. One thing to note is that the population of the European Union dropped substantially between 2019 and 2020. EuroStat now claims that there are approximately 447.71 million citizens in the EU.

**Sources**

EU 2019 Population: <https://ec.europa.eu/eurostat/documents/2995521/9967985/3-10072019-BP-EN.pdf/e152399b-cb9e-4a42-a155-c5de6dfe25d1>

EU 2019 Graduates in tertiary education, in science, math., computing, engineering, manufacturing, construction, by sex - per 1000 of population aged 20-29 https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

EU 2020 Population: <https://ec.europa.eu/eurostat/documents/2995521/11081093/3-10072020-AP-EN.pdf/d2f799bf-4412-05cc-a357-7b49b93615f1>

**Present Milestone**

Exceed the greatest strengths of each of my potential competitors and get my weaknesses on par with their high points. Accomplish this through more powerful tutorial-based automated problem solving. I will also need to grind out content for these sections, but I have to make sure not to try and match a word count. It needs to be succinct and powerful. The videos can go into much greater detail and provide interesting real-word examples.

Get one percent of students who take introductory or general chemistry in the United States to subscribe to at least one month of the program by the end of the second full semester it is running.

**Advertising**

Focus on areas in the country that have the most well-known chemistry or STEM programs. Pay people in large science-based social media groups to periodically post the link along with short descriptions that are tailored to the specific group and their observed interests and norms. Make and print many flyers, pay people to place them on vehicles in areas with large chemistry programs where such an action is legal. Commission a video advertisement for websites like YouTube. Give one free month to anyone who recommends a person that registers for at least one month.

**Covid-19 Impact on Learning Outcomes/Mental Health Sources and Notes**

***https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf***

According to the Department of Education, “Nearly all students have experienced some

challenges to their mental health and well-being during the pandemic and many have lost

access to school-based services and supports, with early research showing disparities based

on race, ethnicity, LGBTQ+ identity, and other factors” (p. iv).

“COVID-19 has raised new barriers for many

postsecondary students, with heightened impacts emerging for students of color, students

with disabilities, and students who are caregivers, both for entry into higher education and

for continuing and completing their studies.” (p. iv).

“More than a year of “staggering” loss, grief, isolation, and uncertainty has taken a toll on many

students’ mental health, compounding the challenges students face in the classroom, whether online

or in person” (p. 2).

“throughout the 2020-21 school year, educators, parents, and administrators across the country continued to cite social and emotional wellbeing as major challenges facing their students,22 especially those learning from home.2” (p. 3).

“fall students in its sample “learned only 67 percent of the math and 87

percent of the reading that grade-level peers would typically have learned” (p. 4).

“More recent evidence shows that the gap continued to widen sharply through winter 2021 for many Black and Latinx students” (p. 15).

“Today’s postsecondary students and the institutions they

attend have faced unprecedented challenges to their

academic and living conditions since March 2021” (p. 31).

“the number of students experiencing financial insecurity and mental

health challenges increased significantly” (p. 31).

“Beginning in mid-March 2020, many—if not most—colleges and

universities shifted quickly to an online learning environment. By fall

2020, out of nearly 3,000 colleges surveyed, 44% were fully or

primarily online, while 27% were fully or primarily in-person.177 Plans

for the spring 2021 term turned out to be similar: 43% of institutions

indicated, as of January 31, 2021, that they planned to remain fully or

primarily online” (p. 32).

“The shift to online learning

had a profound effect on students’ lives, including their decisions to enroll or remain in school.187

That shift took a particularly heavy toll on students who had to juggle their own education while

caring for children, elderly or sick parents, or others” (p. 33).

“According to the Bureau of Labor Statistics, colleges and universities cut an estimated 650,000 jobs

(including student on-campus jobs) from March to December 2020—more than 13% of the higher

education workforce.211 A smaller study conducted in spring 2020 showed that among 822 college

students, of those with jobs, 38% had their positions canceled” (p. 38).

“In May 2020, Digital Promise (a

Congressionally-authorized non-profit organization) conducted a nationwide survey of around a

thousand college and university students. The study found that while overall, 16% of undergraduates

had internet connectivity issues which “often” or “very often” impeded their ability to participate in

coursework, the rates were higher among Black and Hispanic students (17% and 23%, respectively)

than among white students (12%)” (p. 40).

“More than 77% of all students were concerned about being on track to

graduate from their program. These concerns were particularly high among Black (84%) and

Latinx (81%) students” (p. 41).

“In a survey by Active Minds of nearly 2,100 college

students about the impact of COVID-19 on their mental health, one in five of respondents reported

that “their mental health has significantly worsened under COVID-19,” with 80% reporting that

“COVID-19 has negatively impacted their mental health” (p. 43).

“a survey conducted from 1,685 faculty members at 12 colleges

and universities throughout the country, reported overwhelmingly (87%) that they believed student

mental health had “worsened” or “significantly worsened” during the pandemic. The same survey

found that 73% of faculty would embrace additional professional training on student mental health

issues” (p. 43).

“A large-

scale study of college student mental health (see Figure 6), which included nearly 50,000 college

students seeking treatment at 143 counseling centers during the fall 2020, showed, for example, that

students who identified as American Indian, Alaskan Native, Native Hawaiian or Pacific Islander

reported disproportionately high impacts on measures of grief and loss and mental health. Among

students seeking mental health services who were surveyed, Latinx students reported greater

struggles than other groups of students with motivation and focus, while white students reported

higher levels of loneliness” (p. 44).

**Mental Health, Academic Self-Efficacy and Study Progress Among College Students – The SHoT Study, Norway Kirsti Grøtan1 , Erik R. Sund1,2 and Ottar Bjerkeset1 \***

**“**Other studies, from the United States, Canada, and United Kingdom, confirm high(er) rates of mental health problems among university students, compared to the general population in the same age group” (p. 2)

“A longitudinal study from the United States found that mental health problems predicted delayed academic success (GPA)” (p. 2).

“The concept of self-efficacy refers to individuals’ own beliefs about capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997). In educational psychology research self-efficacy has been shown to predict Student’s academic performance and progress across academic areas and level” (p. 2).

“Of individual level factors, previous studies have reported that emotional problems had a negative effect on study progress and on the dropout rate from higher education” (p. 2).

“In turn, depression and anxiety often affect memory and concentration, which makes it more difficult to acquire new knowledge and cope with examination situations. This will often reinforce perceptions of hopelessness and inadequacy, and in many people it will sustain the feeling of anxiety and depressed mood in a vicious circle” (p. 2).

“Our study indicates that students who report symptoms of severe mental health problems have about four times the risk of experiencing low academic self-efficacy compared with those who report few and moderate symptoms of mental health problems” (p. 8).

**Which Stem Majors Require Chemistry Courses?**

Biology students often take general and biochemistry if they go far enough into their studies. Physics students generally take a plethora of chemistry courses. Engineering majors generally take multiple chemistry courses at the undergraduate level. Studies pertaining to dentistry, pharmacy, and nursing also require chemistry courses. It is also prevalent in the various applied science majors at community colleges | Use Big College Catalogues as evidence

**NOTE:** The follow content does not include minimum natural science credit requirements for other majors.

**Majors that Require Chemistry**

***University of Alabama***

***Data Source***

https://catalog.ua.edu/search/?scontext=programs&fscaturl=%2Fundergraduate%2F&gscaturl=%2Fundergraduate%2F&search=Science

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| **Majors that Require Chemistry at University of Alabama** | | |
| Major | Chemistry Course Codes | Chemistry Course Names |
| Marine Science/Geology BS | CH 101 or CH 117  CH 102 or CH 118 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2 |
| Marine Science/Chemistry BS | CH 101 or CH 117  CH 102 or CH 118  CH 223  CH 231  CH 232  CH 340  CH 461  CH 462 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2  Quantitative Analysis  Elem Organic Chemistry 1 and 2  Elem Physical Chemistry  Biochemistry 1 and 2 |
| Biology, BS | CH 101 or CH 117  CH 102 or CH 118  CH 231  CH 232 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2  Elem Organic Chemistry 1 and 2 |
| Microbiology, BS | CH 101 or CH 117  CH 102 or CH 118  CH 231  CH 232 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2  Elem Organic Chemistry 1 and 2 |
| Geology, BS | CH 101 or CH 117  CH 102 or CH 118  CH 223 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2  Quantitative Analysis |
| Mechanical Engineering, BS | CH 101 or CH 117 | General Chemistry 1 or Honors General Chemistry 1 |
| Environmental Engineering, BS | CH 100, 101, or 117  CH 102 or CH 118 | Chemistry 1 – Plus, General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2 |
| Electrical Engineering, BS | CH 101 | General Chemistry 1 |
| Physics, BS | CH 101 or CH 117  CH 102 or CH 118 | General Chemistry 1 or Honors General Chemistry 1  General Chemistry 2 or Honors General Chemistry 2 |
| Architectural Engineering, BS | CH 100, 101, or 117 | Chemistry 1 – Plus, General Chemistry 1 or Honors General Chemistry 1 |
| Civil Engineering, BS | CH 100, 101, or 117 | Chemistry 1 – Plus, General Chemistry 1 or Honors General Chemistry 1 |
| Construction Engineering, BS | CH 100, 101, or 117 (Intro, General 1, or Honors General 1) | Chemistry 1 – Plus, General Chemistry 1 or Honors General Chemistry 1 |
| Computer Engineering, BS | CH 101 | General Chemistry 1 |
| Aerospace Engineering, BS | CH 101 | General Chemistry 1 |
| Food and Nutrition, BS | CH 104, CH 105 | Introductory Chemistry and Introductory Organic Chemistry |
| Nursing, BSN | CH 104, CH 105 | Introductory Chemistry and Introductory Organic Chemistry |
| Metallurgical Engineering, BS | CH 101, CH 102 | General Chemistry 1 and General Chemistry 2 |
| Nursing, RN to BSN | CH 104 | Introductory Chemistry |

***University of Alaska Fairbanks***

***Data Source***

<https://catalog.uaf.edu/bachelors/bachelors-degree-programs/>

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| **Majors that Require Chemistry at University of Alaska Fairbanks** | | |
| Major | Chemistry Course Codes | Chemistry Course Names |
| B.S., Biological Sciences with Concentration | CHEM F105X, CHEM F106X, CHEM F321, CHEM F325 or CHEM F351 | General Chemistry 1  General Chemistry 2  Organic Chemistry 1  Organic Chemistry 2 or General Biochemistry: Metabolism |
| B.S., Civil Engineering | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.A., Earth Science | Complete 1 of the following pairs:  CHEM F103X and CHEM F104X  CHEM F105X, CHEM F106X | Introduction to General Chemistry  Introduction to Organic Chemistry and Biochemistry  General Chemistry 1  General Chemistry 2 |
| B.S., Fisheries and Marine Sciences | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.S., General Science | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.S., Geography Environmental Studies | CHEM F105X | General Chemistry 1 |
| B.S., Geological Engineering | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.S., Geoscience Geospatial Sciences | CHEM F105X CHEM F106X | General Chemistry 1  General Chemistry 2 |
| Minor, Marine Science | CHEM F202, CHEM F212 | Basic Inorganic Chemistry  Chemical Equilibrium and Analysis |
| B.S., Mechanical Engineering | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.S., Mining Engineering | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |
| B.S., Natural Resources and Environmentalism | CHEM F105X | General Chemistry 1 |
| B.S., Petroleum Engineering | CHEM F105X, CHEM F106X | General Chemistry 1  General Chemistry 2 |

***Northern Arizona University***

***Data Source***

https://catalog.nau.edu/Catalog/results?cat=10019&catalogYear=2122

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| **Majors that Require Chemistry at the University of Arizona** | | |
| Major | Chemistry Course Codes | Chemistry Course Names |
| B.S., Aerospace Engineering | CHM 151 or CHM 161/163 | General Chemistry 1 Variants |
| B.S., Animal Sciences | CHM 151 and CHM 152 | General Chemistry 1 and 2 |
| B.S., Biological and Natural Resource Sciences | CHM 151 and CHM 152 | General Chemistry 1 and 2 |
| B.S., Biology | CHM 151 and CHM 152  CHM 230 OR CHM 235  CHM 360 OR CHM 461 | General Chemistry 1 and 2  Fundamental Organic Chemistry or General Organic Chemistry  Fundamental Biochemistry or Biochemistry 1 |
| B.S., Biomedical Science | CHM 230 OR CHM 235 OR (CHM 235 *AND* CHM 238) | Fundamental Organic Chemistry  General Organic Chemistry 1 and 2 |
| B.S., Civil Engineering | CHM 151 | General Chemistry 1 |
| B.S., Ecology and Evolutionary Biology | CHM 151 and CHM 152  (CHM 230 OR CHM 235 OR CHM 440) | General Chemistry 1 and 2  (Fundamental Organic Chemistry, General Organic Chemistry, or Environmental Chemistry) |
| B.S., Environmental Engineering | CHM 151 and CHM 152 and (CHM 152 *or* CHM 235) | General Chemistry 1 and 2  Fundamental or General Organic Chemistry |
| B.S., Environmental Science (Some of the degrees with an emphasis require more chemistry, but all of the environmental science degrees require these two. | CHM 151 and CHM 152 | General Chemistry 1 and 2 |
| B.S., Health Sciences Nutrition and Foods | (CHM 130) OR (CHM 151 AND CHM 152) and (CHM 230 OR CHM 235) | Fundamental Chemistry  OR  General Chemistry 1 and 2  AND  Fundamental or General Organic Chemistry |
| B.S., Mechanical Engineering | CHM 151 | General Chemistry 1 |
| B.S., Microbiology | CHM 151 and 152  (CHM 230 and CHM 320)  OR  (CHM 235 and CHM 238)  CHM 360 OR CHM 461 | General Chemistry 1 and 2  Fundamental Organic Chemistry and Analytical Chemistry  General Organic Chemistry and General Organic Chemistry 2  Fundamental Biochemistry or Biochemistry 1 |

***University of Arkansas***

***Data Source***

<https://catalog.uark.edu/undergraduatecatalog/fieldsofstudy/#fieldsalphabeticallytext>

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| **Majors that Require Chemistry at the University of Arizona** | | |
| Major | Chemistry Course Codes | Chemistry Course Names |
| Agricultural Education, Communications, and Technology (AECT) | CHEM 1073 | Fundamentals of Chemistry |
| Animal Science ANSC | CHEM 1073 or CHEM 1123 | Fundamentals of Chemistry or University Chemistry 2 |
| Biology | CHEM 1103 and CHEM 1123 and CHEM 3603 and CHEM 3613 and CHEM 3813 | University Chemistry 1 and 2  Organic Chemistry 1 and 2  Elements of Biochemistry |
| Biological and Agricultural Engineering (BAEG) | CHEM 1103 and CHEM 1123  CHEM 3603 OR CHEM 2613 | University Chemistry 1 and 2  Organic Chemistry 1 or Organic Physiological Chemistry |
| Biomedical Engineering | CHEM 1103 and CHEM 3603 | University Chemistry 1  Organic Chemistry 1 |
| Civil Engineering | CHEM 1103 | University Chemistry 1 |
| Computer Science and Computer Engineering (CSCE) | CHEM 1103 |  |
| Crop Science (CPSC) | CHEM 2613  CHEM 1073 or CHEM 1103  CHEM 1123 | Organic Physiological Chemistry  Fundamentals of Chemistry or University Chemistry 1 and 2 |
| Electrical Engineering | CHEM 1103 | University Chemistry 1 |
| Environmental, Soil, and Water Science (ESWS) | CHEM 1103 and CHEM 1123  CHEM 2613 or CHEM 3603 | University Chemistry 1 and 2  Organic Physiological Chemistry  Organic Chemistry 1 |
| Food, Nutrition, and Health (FNAH) | CHEM 1073 | Fundamentals of chemistry |
| Food Science (FDSC) | CHEM 1103 and CHEM 1123  CHEM 3813  CHEM 2613 | University Chemistry 1 and 2  Elements of Biochemistry  Organic Physiological Chemistry |
| Geology (GEOL) | CHEM 1103 and CHEM 1123 |  |
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<https://www.statista.com/statistics/306880/us-higher-education-institutions-by-state/>

**Reducing achievement gaps in undergraduate general chemistry could lift underrepresented students into a “hyperpersistent zone” R. B. Harris \*, M.R. Mack , J. Bryant, E. J. Theobald , S. Freeman**

**“**Grade gaps are particularly prominent in undergraduate science, technology, engineering, and mathematics (STEM) courses (3). In these disciplines, women and underrepresented minorities (URMs) actually underperform, on average, relative to well-represented peers with the same academic preparation” (p. 1).

“6-year STEM-completion rates vary from 52% for Asian-Americans and 43% for Caucasians to 22% for African-Americans, 29% for Latinos/Latinas, and 25% for Native Americans” (p. 1).

“52% of women and 48% of men who enter U.S. colleges intend to major in STEM fields, but 6-year completion rates for these STEMinterested students are 38% for women and 43% for me” (p. 1).

“For the overall student population, poor performance in first-year STEM courses is negatively correlated with persistence in STEM” (p. 1)

“General chemistry is a year-long course sequence that most STEM-interested students begin in the first fall of their first year of college” (p. 1).

“It functions as a gateway or gatekeeper because it is required for many STEM majors, including virtually all of those offered in the life sciences and most in engineering, and has been shown to have an especially large impact on students who are interested in careers in medicine, dentistry, or pharmacy” (p. 1).

“studies that followed cohorts of talented URM students who entered college on a premedical track found that for the individuals who abandoned that ambition, poor performance in general chemistry was the most important factor driving their decision (12).” (p. 1).

“organic chemistry (OChem) as well because it represents a second year-long sequence required of students on the pre-health professional track.” (p. 1).

“We collected and analyzed data on final grades in GenChem and OChem courses offered at the University of Washington from 2001 to 2016” (p. 1).

“The final dataset included 75,759 records from 25,768 unique student” (p. 1).

“In organic chemistry, women experience much larger raw grade gaps than in the first two courses of general chemistry, indicating that women perform less well in organic chemistry, relative to men, than they do in general chemistry” (p. 2).

“We defined individuals who self-identified as AfricanAmerican, Latino/Latina, Native American, Native Hawaiian, or Pacific Islander in terms of either race or ethnicity as URM, and students who self-identified as Caucasian, Asian-American, or International as non-URM” (p. 2).

“For all four student subgroups, the hazard for not continuing was highest in the first general chemistry course, with female, low-SES, and first-generation students experiencing a second peak in risk in the first organic chemistry course” (p. 3).

“We found that students from all four subgroups were more likely to fail than their wellrepresented counterparts and that women who passed the course were less likely to continue to the next course in the series than men” (p. 3).

“One of the most important results from our analysis is establishing a strong connection between grades in general chemistry and attrition from a course sequence required to continue in STEM” (p. 4).

“Students who leave the introductory chemistry series are effectively prevented from pursuing a STEM major unless they complete the general chemistry series at a different institution.” (p. 4).

“These observations suggest that something about undergraduate STEM courses, beyond differences in preparation, is having a strong negative impact on underrepresented students” (p. 5).

2020

“Lovecchio and Dundes reported gender to be a moderator for the relationship between performance in organic chemistry courses, with women more likely to alter their career plans as a result of poor performance than men”