United Nations Sustainable Development Goals (UN SDGs)

IMSA Snapshot
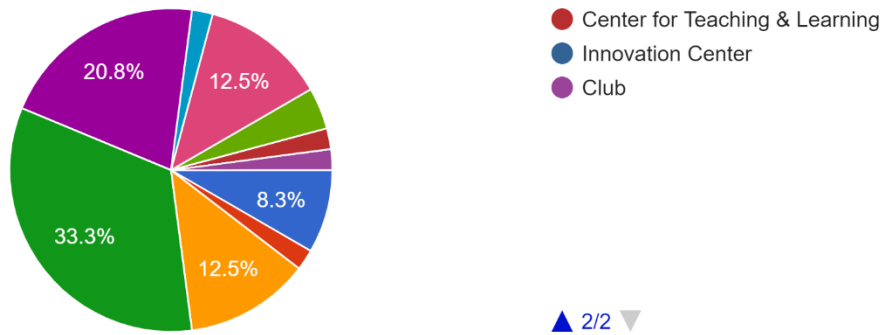
Department

48 responses

- English
- Fine Arts
- History/Social Science
- Mathematics/Computer Science
- Science
- Wellness
- World Language
- Student Life

▲ 1/2 ▼

Department

48 responses

- Center for Teaching & Learning
- Innovation Center
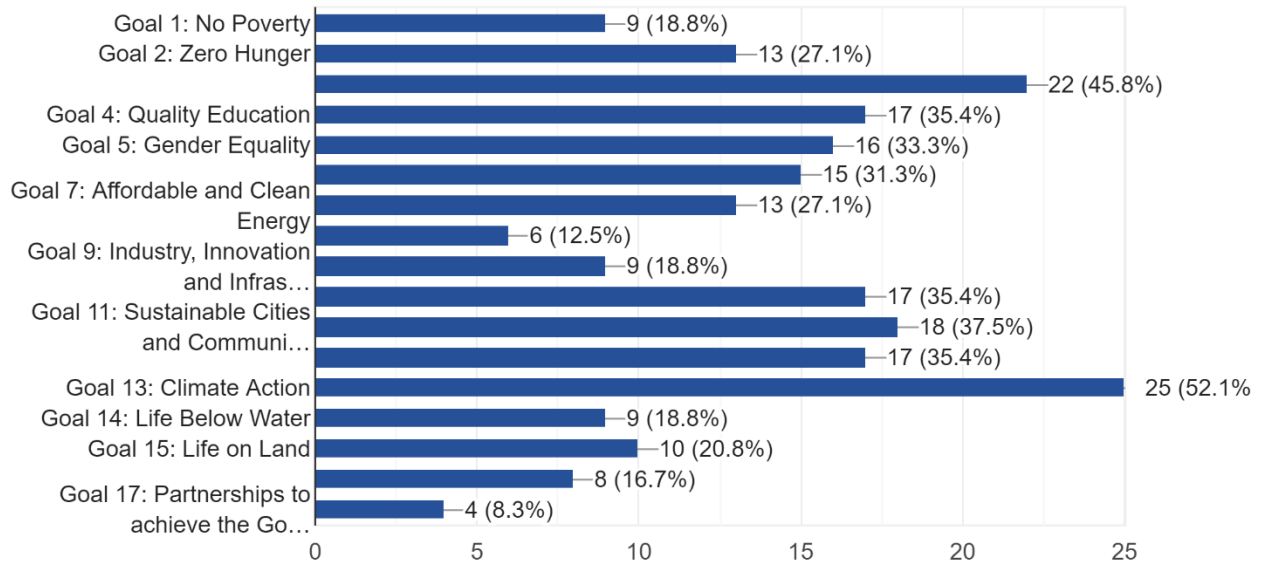- Club

▲ 2/2 ▼
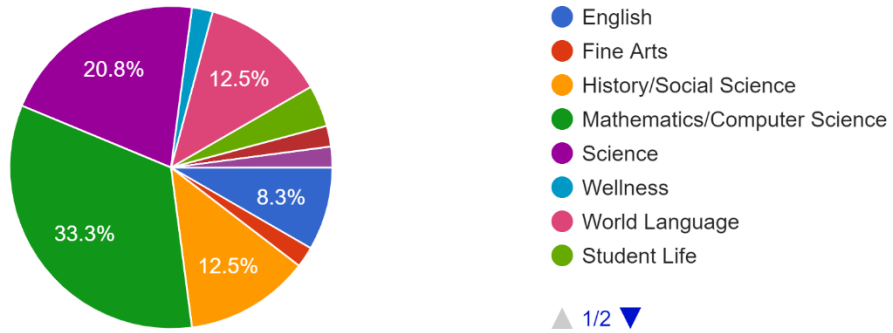
Course/Program

Moving and Learning
America in the Contemporary World
US Government

Music and Visual Arts
History of Biology
History of the Environment
World in the Twentieth Century

History of Technology
America in the Contemporary World
Differential Equations
LE1-3 core
Gender Studies
LE3, Victorian Fiction & Shakespeare
Modern World Fiction
Statistical Experimentation and Inference
Modern Geometries
Scientific Inquiry-Chemistry
EBE (Evolution, Biodiversity, Ecology)
Innovators Developing Accessible Tools for Astronomy (Club)
Molecular and Cellular Biology/ Cancer Biology
Advanced Biological Systems (ABS)
PAD
Behavioral Biology (next year, new course)
French I & III
French IV & V
Chinese courses
German
Spanish IV
Spanish V
Service Learning
Planetary Science
Leadership Education and Development (LEAD)
CS Program: CSI, OOP, Web Tech, Seminar
Microcontroller Applications (CS)
Computer Science Inquiry
Computer Seminar: Android Apps
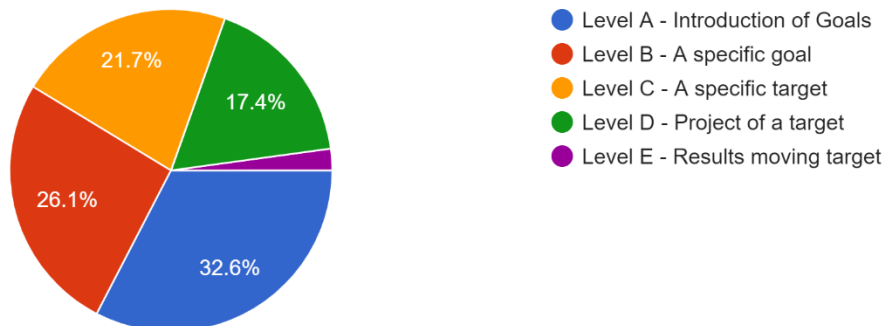Invention Convention April Funshop - East St. Louis

UNSDG - check all that apply

48 responses

Goal	Value
Goal 1: No Poverty	9 (18.8%)
Goal 2: Zero Hunger	13 (27.1%)
	22 (45.8%)
Goal 4: Quality Education	17 (35.4%)
Goal 5: Gender Equality	16 (33.3%)
Goal 7: Affordable and Clean Energy	15 (31.3%)
	13 (27.1%)
Goal 9: Industry, Innovation and Infras…	6 (12.5%)
	9 (18.8%)
Goal 11: Sustainable Cities and Communi…	17 (35.4%)
	18 (37.5%)
	17 (35.4%)
Goal 13: Climate Action	25 (52.1%
Goal 14: Life Below Water	9 (18.8%)
Goal 15: Life on Land	10 (20.8%)
	8 (16.7%)
Goal 17: Partnerships to achieve the Go…	4 (8.3%)

Level of Engagement (see Engagement Rubric)

46 responses

- Level A - Introduction of Goals — 32.6%
- Level B - A specific goal — 26.1%
- Level C - A specific target — 21.7%
- Level D - Project of a target — 17.4%
- Level E - Results moving target

Describe how UNSDGs are currently addressed or incorporated into curriculum:

During Moving and Learning students work in groups of 3 to create a specific product to address one of the UNSDGs. In conjunction with a group project in which students research, design, and present on topics of essential nutrients (carbohydrates, protein, fats, minerals, vitamins, and water), metabolism, weight management, body composition, and stress management, students were to create a product or idea that enhances one of the 17 UNSDGs. Examples of how students address the UNSDGs are to create an app or product to make a positive impact on the goals. Students are addressing Zero Hunger, and Good Health and Well-Being.

We run a simulation along the lines of Model UN. In so doing, students learn about policy making (including the political and economic pitfalls of the process). The question posed to students is how to re-evaluate the Paris Climate Accord given the US's abdication. Student groups represent individual states in a simulation. They do background research as well as work on proposing realistic policy proposals.

There is a capstone assignment in which students work in groups to produce a policy memo on a specific UNSDG. While each student will submit his or her own version of that policy memo, the students will work in groups that will present on the UNSDG they have identified. The groups will be given the opportunity to choose any of the UNSDGs, though the instructor will need to approve the subject based on availability of resources and likelihood of successfully being able to complete the assignment. Some of the goals will work better in this context than others.

We cultivate an informed understanding of the UN Goals via concerts that shine a spotlight on poverty, hunger, gender equality, water and sanitation. We presented two music concerts. Music and Visual Arts collaborated to create two UN awareness events. Chorus, Band and Orchestra provided the music and the Visual Arts Department provided posters, sets and special effects. Visual Arts students developed posters using research, design principles and technology. Music students learned about the UN goals, through researching and performing choral works about zero hunger, clean water availability and climate issues. The Instrumental Concert focused on raising money for the goals of UNICEF and of the Kiwanis Club. The Instrumental students learned about the UN goals via researching the goals of both UNICEF and the Kiwanis Club, as well as the history behind their music. They also spoke with members regarding future goals. Members from these organizations attended the concert to support the effort. The effort was successful, raising $425.00 to support UNICEF. Through these concerts students, parents and community members become more aware of global issues that plague our planet.

I am addressing the Goals currently in my World in the Twentieth century class intermittently by adding environmental issues, spending considerable time on the "third world" and how it got to be that way, and introducing the idea of climate change as a major consequence of the otherwise triumphant Industrial and Scientific Revolutions. The degree to which the twentieth century is a century of plenty and progress is also the degree to which the twenty-first century will be the exact opposite if action is not taken. I am addressing the Goals far more systemically in the History of Biology class, where we discuss at length the difficulty of apocalyptic and cornucopian rhetoric and how it does or does not help us manage the issue of climate change (which, by the way, will result in major issues for life in water, and on land, the ability of China, India, and Africa to drag their populations out of poverty, the availability of clean water, education, and food, and justice). We are also doing a capstone in that class (as we did last year) on issues related to these Goals. This year, I am having the students work together for a month to understand and then try to assess the solutions already available for climate change. I will send a copy of the current draft of this project to Diane Hinterlong after this survey.

The "History of Biology" course focuses on a number of themes that relate to those UN Strategic Development Goals that address environmental concerns. The course traces the history of western views of nature, natural history, and paleontology; it also pays particular attention to Darwinian evolution. The

last unit in the course addresses changing views of evolutionary dynamics in the late 20th century, and the revival of Catastrophist models of extinction. This material prepares students well for a final capstone project on either Climate Action or Extinction of Species (on land or below water). Students will choose a specific problem of interest: for example, the loss of coral reefs in the western Pacific. They will evaluate the problem in biological, environmental, economic, and geopolitical terms, drawing on the History of Biology course and other relevant aspects of their education at IMSA. They will explore the rhetoric surrounding the problem, and discuss how that rhetoric discusses different ideological elements for the History of Biology course. Finally, they will propose different solutions to the problem, and critique those solutions (again, in environmental, economic, and geopolitical terms). The same assignment suits the "America and the World" course. In this case, students will pay less attention to ideological context and environmental rhetoric, and more attention to economics and geopolitics. However, the essence of the assignment remains unchanged. The description of the assessment is attached below: SDG Final Project 2019 Course: History of Biology; America and the World Strategic Development Goals: Climate Action; Life on Land; Life Below Water Goals: Students will draw on different aspects of their IMSA experience in addressing a particular contemporary environmental problem in an interdisciplinary manner. Students will explore a complex environmental problem with global implications. Students will evaluate contemporary environmental debates in the context of a broad historical understanding of modern attitudes towards nature and in terms of contemporary economic and geopolitical realities. Students will evaluate different solutions to the problem, with emphasis on economic, geopolitical, and ideological factors. Process: Students will spend two weeks at the end of the spring semester working in teams of three on a cross-disciplinary project addressing a particular contemporary environmental problem or issue. They will submit a proposal and a preliminary list of sources prior to the commencement of the project period. Students will come to classes as scheduled for attendance, then they will be released for project work. The course instructor will be available during the class period to answer questions and give assistance if needed. Students will explore the problem they choose, consider the relevant scientific, economic, political, and ethical issues, and evaluate possible strategies, technical or otherwise, for addressing that problem. In addition, they will examine current discussions of the issues involved, and place those discussions in intellectual context. At the end of the course, student groups will present their work to the class. Assessment: 1. Student groups will submit a proposal of their project, with a partial list of sources, one week prior to the start of the project period. 2. Student groups will submit a portfolio of their work at the end of the project. The portfolio will include annotated evidence on the nature of the problem and its extent, a written evaluation of different strategies for solving the problem, and a discussion of the rhetoric surrounding the problem and its relationship to modern environmental discourse.

We are presently in a three week unit on how fossil fuels are consumed in society. The students are building a collection of models of ships, cars, trucks, airplanes, and helicopters, to give them a sense of how pervasive fossil fuels are in our world. This includes external combustion engines, internal combustion engines, piston engines, turbines, etc. This will then be followed up by a research project in which team of students will look at how our dependence on these fuels might be reduced.

Topics in Current Affairs (Eysturlid) (MOD 2 and MOD 7): History SDG Final Project 2019 Goal: Students will engage any of the SDGs goals 3, 9 and 11, under the general considerations of the 16th SDG, as stated below: "Peace, Justice and Strong Institutions: Empowering Strong Local Institutions to Develop, Implement, Monitor and Account for Ambitious National SDG Responses." Example: Students could look at how the "Startup My City: Smart and sustainable cities in Asia" (http://startupmycity.economist.com/) is an approach to the 11th SDG on "Fostering Healthier Cities." Student generated questions would focus on how this initiative would require the assistance and funding of strong government backing and the backing of local civic organizations. Further, what is available technologically, what are the costs, and what are the goals? Is this proposal really viable in the current political setting? If not, what must change? SDG 3: https://sustainabledevelopment.un.org/sdg3 SDG 9: https://sustainabledevelopment.un.org/sdg9 SDG 11: https://sustainabledevelopment.un.org/sdg11 Process: Students will turn in a proposal before

the May 6th start date and will receive that proposal back by then (I must have your proposal by 3rd). They will then proceed to make use of class time to find and read through resources, whether in print or online. Emphasis will be given to books, journal articles or website materials tied to the UN (and affiliated organizations). Students will make specific report on their progress with the instructor at two points, these being May 8th and May 13th. (Informal Assessments) Assessment: Proposal: Students (by pairs) will submit a one-page proposal that gives the SDG they have selected and how it potentially fits within the parameters of SDG 16. They will also give a "starter" bibliography of six or more resources. Student pairs will not be able to work on the same project area as other pairs. Final PPT and portfolio: PPT: Student pair will submit and present (5 minutes timed) a briefly annotated PPT of their SDG focus, the research done, and the approach(es) that they formulated. Portfolio: Student pairs will submit, in conjunction with the PPT, a summary of their problem, the resources (in an annotated bibliography of at least 15 sources) consulted, any possible work done with other teachers or staff, and their final take on an approach to the problem. Grade: The combination of the proposal, the PPT and the Portfolio will come together to form the overall grade. This is 20% of the final grade.

In my differential equations class, I've asked the students to present on topics that are included in the textbook but slightly outside the normal course material. One of these presentations involved modeling road salt and pollution in a small pond using differential equations. The students presented the "mixing problem" and discussed the long-term behavior of the solutions in context. They also made brief reference to the broader issues at hand.

When designing the LE1-3 curriculum, we focus on issues around equity. LE1 and 2 introduce American Literature and LE3 is a survey of British literature. We firmly believe that every literature class must open up critical discussion about how to interact with, study, empathize with, care about, respect, and question cultures that function very differently than your own. This past year, we rewrote the objectives of our curriculum and worked closely with the UN's "Education for Sustainable Development Goals Learning Objectives" http://unesdoc.unesco.org/images/0024/002474/247444e.pdf. The UNSDG Learning Objectives are focused on developing competencies, which they define as "the specific attributes individuals need for action and self-organization in various complex contexts and situations. They include cognitive, affective, volitional and motivational elements; hence they are an interplay of knowledge, capacities and skills, motives and affective dispositions. Competencies cannot be taught, but have to be developed by the learners themselves. They are acquired during action, on the basis of experience and reflection" (10). Here are the "key competencies for sustainability" as defined by the UN: 1) Systems thinking competency: the abilities to recognize and understand relationships; to analyze complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty. 2) Anticipatory competency: the abilities to understand and evaluate multiple futures – possible, probable and desirable; to create one's own visions for the future; to apply the precautionary principle; to assess the consequences of actions; and to deal with risks and changes. 3) Normative competency: the abilities to understand and reflect on the norms and values that underlie one's actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions. 4) Strategic competency: the abilities to collectively develop and implement innovative actions that further sustainability at the local level and further afield. 5) Collaboration competency: the abilities to learn from others; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to and be sensitive to others (empathic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem solving. 6) Critical thinking competency: the ability to question norms, practices and opinions; to reflect on own one's values, perceptions and actions; and to take a position in the sustainability discourse. 7) Self-awareness competency: the ability to reflect on one's own role in the local community and (global) society; to continually evaluate and further motivate one's actions; and to deal with one's feelings and desires. 8) Integrated problem-solving competency: the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable,

inclusive and equitable solution options that promote sustainable development, integrating the abovementioned competences. Our core aligns with all 8 of these competencies.

In this class students analyze the causes and effects of sex differences in our society. They begin with the essential debate – is biological difference or social modeling the principal factor in determining differences? – and then look more closely at the question through case studies and current events. Students examine several readings that complicate the premises and assumptions of this debate; these readings analyze intersexuality, the historical one-sex model, and transgender, among other topics. Students also examine cultural nodes that illuminate the context of this debate, including politics, cinematic representations of the sexes, gender and finance, gender and politics, and questions of language use. The course catalyzes meaningful debate and calls on students to gather evidence and think through their beliefs. A final project is a multimodal presentation that requires a thoughtful response to one of the Goal 5 targets. The podcasts are shared with the IMSA community.

All three of these historical survey courses directly introduce Goal 5 in our in-class discussions of the historical cultural creation of gender roles. We explore the history of gender inequity and ask "how is what we see then reflected in what we see now?"

Reading the literature of the world allows us to understand the impact of the UNSDGs in a powerful way. In Modern World fiction, students read texts by authors of more than 20 different nations, including Antigua, Bengal, Chile, China, Chippewa Nation, Columbia, India, Iran, Japan, Lebanon, Mexico, Nigeria, Pakistan, Paraguay, Peru, South Africa, Vietnam. The short stories, plays, and novels bring students global perspective on issues including poverty, hunger, health, education, gender, sanitation, working conditions, and war.

At IMSA, we see the potential for changes to be made in aiding the progress of SDG 12, Responsible Consumption and Production. As a community, we consume resources (including water, electricity, and paper) without much thought. As such a mindset has looming environmental ramifications, we would like to address it as soon as possible by tracking a variety of environmental benchmarks at IMSA. Areas of Measurement In an attempt to shed some light on IMSA's current waste production, we would like to gather data from recent years on the following measures: ● Food waste volume from Sodexo ● Amount of electricity used in the halls and main building ● Amount of gas used for heating in the halls and main building ● Amount of water used in the halls and main building ● Volume of garbage produced by halls and main building ● Volume of recycling produced by halls and main building ● IMSA's "carbon footprint," or the amount of carbon dioxide and other carbon compounds emitted due to the consumption of fossil fuels Compiling these data sets will help us understand 1) the areas in which IMSA generates the most waste and 2) the areas in which IMSA could potentially begin to minimize waste. Through comparisons to national benchmarks, we can assess IMSA's current level of consumption versus waste and set goals to more efficiently use resources, thus reducing our impact on the planet. Tracking and understanding these measures will allow us to contribute to the responsible consumption that SDG 12 hopes to achieve.

Unit on using geometry to help prove that legislative districts have been gerrymandered.

Mostly via the lab work. For example, we have a lab that works on acids and bases and I discuss the harmful effect of acid rain on certain stones. We also talk about what it means for the oceans to "acidify".

In EBE we discuss change in biodiversity on Earth over geologic time and changes happening in the recent past. We discuss how recent human activity has contributed to climate change. The ecology unit includes information about biogeochemical cycles, food webs, top-down and bottom up control, interconnectedness of biological systems in terms of both biotic and abiotic factors, and more. Students have a project in which they research a specific ecosystem and a disturbance to that ecosystem. They are assigned to come up with ways to share information in different forms (pamphlet, infographic, magazine articles), but as yet we have not put that information out in order to solve any problems.

With the many challenges in front of us regarding the United Nations Sustainable Development Goals, including the consumption of certain natural resources and the increasing global warming, it is easy to find the circumstances quite daunting. Yet, sometimes small changes can make big differences. While

using both finite and infinite series, we are able to show that when consumption of a specified resource increases by only 1% each year, we run out of this non-renewable resource in about 18 years. Yet, if we are able to reduce our consumption by 5% annually, we would never run out of this resource! Powerful stuff!

Our curriculum in general is building analytical skills for working on various problems in our quantitative world, including UNSDGs.

With the potential restructuring of the curriculum or even problem sets, we could focus some of our efforts on - Helping our students appreciate different types of growth and decay in context with some UNSDGs - Increasing their sense of scale and number sense, again in context with some UNSDGS - Encouraging students to see themselves as potentially part of the solution and not just observers.

IDATA is an NSF (National Science Foundation) funded, 2-year collaborative project to investigate and develop new tools and methodologies for astronomy research which will allow the field to be more accessible to the blind and visually impaired (BVI) populations.

Our ABS course is the keystone program around which our biology program is being organized and improved, and the development of which was done with specific connections to the UNSDG's in mind. There are many examples of specifically addressed and overlapping goals that different activities are focused on in the course. The health and well being goal, for example, strongly connects to our unit on cancer biology, covering risk factors (exposure to environment, socioeconomic demographics, etc), biological pathways, and treatments of the disease. We also discussed the microbiome and some fundamental concepts of inflammation, along with a project where students studied the genetics of different strains of influenza, modeling how that information can be used in creation of vaccines and other preventative measures. In the unit we are currently covering, our focus crosses many goals, but is very much related to the life on land and life underwater, as we are working on addressing fundamentals of metabolism, biological carbon cycle, and impact of increase carbon emissions. The lab we are doing involves creation of algae balls in a solution that can show pH changes through color, and which can demonstrate how different environmental conditions (light availability, excess CO_2, etc) can impact the metabolism of the algae. Algae is an organism that is often used as a marker of the health of an ecosystem because of its place in the food web and various biochemical cycles, so it connects easily to larger context. A final example is the documentary project. This project involves the students researching cities and their pros and cons related to sustainability, health of individuals, health of the ecosystem, and more and then proposing ideas and changes that could be made in the creation of a new city. We have shared some of this course development and aspects of the curriculum outside of IMSA already through presentations, but plan to continue to do so more widely, and with more exportable curriculum, as we continue forward.

Cancer Biology: research projects related to hallmarks of cancer, tumor formation, risks, and treatment that are shared with the whole class. Goal 3: Health and Well Being As a biology topic, cancer is a great educational choice because it connects so many different areas of biology, like physiology, infectious disease, immunology, metabolism, environmental influences,and molecular pathways and response. It also provide the students with skills that will make current research in molecular biology more accessible to them, as they read about advances in the field. This topic is also very relevant from a social emotional standpoint for our students because there is a high probability that they will have experience with cancer, either themselves or with people close to them. Risks for cancer, and access to preventative screening and medical care is also a major social issue that goes beyond the biology of the disease. Stem Cells and Sex Development : readings and class discussion Goal 5: Gender Equality Focusing on the biological mechanisms behind development help to uncover misconceptions about development of sex, similarities between the sexes,variability of biological and physiological expression within sexes, and differences between sex, gender, and orientation. Having a more scientific perspective on these topics can play a part in how students will form their views and decide on actions related to promoting gender equality. Epigenetics: literature readings, discussions, and research presentations Numerous Goals Epigenetics is

a field of gene regulation that is helping us understand more about cell function and differentiation, but also more about how environmental factors, including ancestral and personal experiences, can influence how our genes are regulated, and thus some aspects of our physiology, behavior, risk for disease, and other factors. Mental Health: molecular pathway building, connections to epigenetics, applications specifically in regards to treatment and future research Looking at molecular pathways is always an engaging activity with the students, as they both look at information discussing a biological process and determine a pathway that represents it, as well as look at pathways and try to draw conclusions from them. For this unit, I chose pathways known to have specific connections to mental health, such as the serotonin neurotransmitter. Once students had worked with the pathway, we discussed the function of treatments such as SSRI's used for depression, the pros and cons to the body's physiology, and also how we are starting to understand risk factors for issues such as depression as related to epigenetics. (We also talked about other things such as the function of sleep in terms of brain physiology, etc) These topics led to structured conversations about how understanding the biology behind mental conditions and how we communicate and educate about these concepts can impact social perspectives and stigmas connected to mental health. **Note: :Most of the major UNSDG connections in this course will remain as it transitions to its new iteration as "Cancer Biology" but will be supported with more inquiry activities and experiences in the lab, as students who have come through our ABS core class will have the background necessary to dive deeply into the content, more so than has been possible in the past.

We have incorporated UNSDGs into our units as a common thread to allow students to build on it. For example, clean water is a focus for students in the microbiome unit and also in their sustainable cities project.

Students in PAD discuss diversity and gender equality to enhance their awareness and recognize their biases. They focus on good health and well being by discussing diet and lifestyle for the diseases we study. Students partner with each other to attain goals such as the heart model project and the graphic novels project, to enhance their understanding better to gain a quality education.

This course is currently under development, but will be a new and unique offering in our biology department. The class will be similar in some ways to an animal behavior class you might fine in some biology major programs, but with a larger influence on the biology of human behavior and its evolutionary basis. The exact methods by which we will address the UNSDGs is not yet set, but will likely include literature readings, student research and presentations, structured discussions, and lab work (on other organisms we can safely use here, with the possibility of some data collection among students... contingent on work with and approval from research office). This field is so exciting because it not only discusses what happens in natural ecosystems and how we as humans are influencing things like animal behavior through environmental impact , urban development, etc, it also offers perspectives on inequality, gender identity, social structures, mental health and well being, that is unique because of the connections we hope to make. For example, related to equality we may search to understand 1) what the reality is (i.e. from a biological standpoint ethnicity has no real meaning) 2)what certain perspectives and/or misconceptions exist and why (i.e. that there are significant genetic differences, when data shows the majority are superficial) 3) how and why our perspectives and behaviors exist (i.e. tribal mentality reflects a behavior which can be a selective advantage for survival and success in other species and may have in ours in human history) 4)how we can use our increased understanding of human behavior in a positive way (i.e. realize it's a perception or unconscious bias, not a reality and behave accordingly beyond our evolutionary drivers). I have a biased perspective, but I have always said that Evolutionary biology related to behavior has helped me understand other people, and how societies work and malfunction, much more than any psychology or sociology class I have taken, and strongly believe that giving students one more lens in which to see the world through will help them address some of the most significant issues in society in the future.

Student presentations, research projects, and activities. For example, Mardi Gras with a mental health and well-being theme (Goal 3).

Goal 2, Level B; We have incorporated Zero Hunger in the Food Unit in Chinese 2; Climate Action in the Wealth and Climate Unit; Gender Equality and Reduced Inequality in the Love and Friendship Unit (Chinese 3); Education in My School Unit (Chinese 1)

Students worked on projects as part of the assessment for units on art and social justice. They needed to focus on one UNSDG and integrate these as part of their projects. One involved creating an outline for a mural highlighting an issue associated with a UNSDG. The other one was a project in which they had to nominate a candidate (a candidate from a Latin American country) for a prize such as CNN Heroes.

While covering current affairs for different countries, students become familiarized with some of the goals. We go deeper (Level B) for Gender Equality (G5), Reduced Inequality (G10), and Clean Water and Sanitation (G6). For example, after watching a movie that depicts the Cochabamba Water War, students investigate the event as well as the complex subject of water privatization, including the role of international entities and interests such as US companies.

This year with the new app HelperHelper, students are able to engage more actively with their service learning projects. Students are asked to reflect and assess the work they are doing in their communities and are asked to target a specific UNSDG in the process. We have service learning projects that are ongoing with partner organizations such as Hesed House which is a homeless shelter, Exodus where we tutor students and Feed My Starving Children which address food insecurities around the globe. Also this year, students worked on WE School service campaigns and followed a curriculum to learn more about why things are the way they are. Students completed nine service projects related to WE Schools.

We discuss the causes and some of the effects of climate change and some issues behind the difficulties in coming up with solutions.

Sophomore students work in groups to develop a project which addresses a specific UNSDG. This year we have 66 student projects which have been developed and they have been published to Digital Commons. Students have been actively engaged in these projects all semester.

Students work on multiple assignments/projects that make them socially aware of other cultures, aware of the climate is change, how to be a responsible citizen and how US population is changing. They also use GPS technology to determine the location of food pantries provide links to the maps etc.

For the last few years, the long-term project in Engineering has been tied to any 1 of the UNSDG's at the students' discretion. I checked the ones that have been chosen in my sections.

In the pilot, students had to option to tie their long-term project to any one of the UNSDG's. Sixteen of seventeen groups did so and the goals chosen have been selected in the list.

A number of projects in Microcontroller Applications were related to The UNSDGs. An example of one was how sensors can be used to continually adjust the alignment of a solar panel to be in sync with (track) the movement of the sun.

Quarter project1: Looking at US population and analyzing the demographics using baby names, talking about migration and how it affects our cities and communities o Goal 4: Quality Education o Goal 11: Sustainable cities and communities

Quarter project2: Looking at weather data for Midway airport and comparing it with previous years. Compare the daily high, low, and average rain fall today with the historical average daily highs, lows and rain falls o Goal 13: Climate action

Will write up assignments about sustainability (Goal 11) using simulation and prediction in the future. Students will use python programming language to write code o Goal 12: Responsible consumption and production o Goal 13: Climate action o Can tie to many goals depending on how the assignment is written

Will write up assignments about sustainability (Goal 11) using simulation and prediction in the future. Students will use java programming language to write code o Goal 12: Responsible consumption and production o Goal 13: Climate action o can tie to many goals depending on how the assignment is written

We have created a quilt to represent the people of African tribes using Java program o Goal 10: Reducing inequalities through cultural awareness

Student created an app to give information about food banks and other resources in the area. They used GPS to show the maps and links to the resource pages. o Goal 1: No poverty o Goal 2: Zero Hunger o Goal 3: Good health and well being

Elementary students learn that they have the ability to invent and innovate.

Describe any future plans:

Students recently submitted these projects and as a team we would like to ask students how effective our instructions were. The students were allowed a great deal of freedom for more creativity, but we are thinking we may work with computer science and create a real app.

We will continue to use political simulations in all classes when possible to introduce students to the complications of the policy making process.

The whole course curriculum has been redirected toward policy creation at the expense of other material in order to accommodate this particular unit. Right now, the plan is to see how this works in a course on government and to refocus as needed going forward.

I'm currently working on a draft class that will further approach specific goals about equality and justice and potentially what a history of exploitation can do to a nations ability to solve the problems presented by the UN here. It's been growing out of an interest in keeping second semester seniors engaged, but also in an interest in really letting the students do their own projects. The class will be called something like "Investigating Africa" or perhaps simply "Africa" and will do something that is perhaps antithetical to my training, which is to try to imagine how Africa came to be what it is today in order to think about what issues it needs to solve from the Goals list. Some historians have argued that, being mostly poor and politically unstable, Africa is in real danger of literally being wiped off the map by climate change, although I'm not sure how much we will delve into that issue. What I would really like if for students to get to know Africa through research processes that will be carefully guided by me and influenced by research simultaneously done by their peers on adjacent issues.

This research will be followed by a series of group presentations in May. The kids generally enjoy standing up in public and talking about their researches. One group was presenting on Piezoelectricity and introduced their topic with a kick line singing "Shake, Rattle, and Roll." With graduating seniors, such things are a useful aid to keeping their attention

Our immediate consideration as a History team will be to create an effective instrument to survey the students about their engagement in the SDG capstone with history. This will, ideally, drive development for the next year. Also to get the three new team members to weigh-in.

In the future, I plan to build a body of literature which I can read with my differential equations students. I hope that we can read an article every other week or so; and then take some class time to discuss its strengths and weaknesses. Finding level-appropriate resources will take time, but I do intend to include some articles which directly relate to the UN SDGs.

Future stats classes could propose means of reducing consumption in any of the above areas and measure the effectiveness of the effort against the benchmarks found in the S18 project.

Share materials at ICTM state math conference.

In the year long chemistry class, specific labs target the UNSDG goals directly. Not in place yet, the idea is to rewrite/ extend the current lab curriculum for direct inquiry about the topic. For example, if we work

on precipitation, one of the post-lab questions might be "what chemical process could make turbid water more clear?" leading the student to learn about flocculation and other sewage treatment processes.

Next semester I would like to have the class participate in one or more citizen scientist projects so that we can contribute to current research projects. I am working on ways to address UN goals more specifically in general since several fit in so well with this topic. I would like to work in more assignments geared toward solution development rather than only researching and communicating problems and reporting solutions that have been developed by others. I also want to do a more extended unit on conservation efforts and solution on land and under water.

We have a summer component to this project which will be followed by an attempt to publish what we have done. In the meantime, we are presenting at the Innovation Showcase at IMSA.

We plan to continue polishing, revising, and reviewing the curriculum in this course, especially through the next year now that we have done our pilot with the program, and to continue to share our curriculum and implementation, as well as our experience developing the course, with other educators and programs. An ideal future goal would be collaboration with other educators working in similar types of curriculum, both between the teachers and the students themselves.

As the Cancer Biology course is developed more thoroughly and implemented, we would like to have the students build more of their understanding of the concepts through lab based inquiry as much as possible. While for some aspects this is not feasible (i.e. manipulation of biology to determine mental health outcomes) the restructure of our program will allow students to do more lab work with pathways, particularly related to cancer biology, to strengthen their understanding of the connections (i.e. environmental factors and risks) and treatments, and design their own research experiences within the course to further these relationships. Some of the units from this course have already been shared on digital commons, and as we develop more curriculum we will expand this as well. There are also potential conference presentations in the future.

Students are involved in projects that address UNSDGs, we are synthesizing research on their work.

The focus of this class is being changed to incorporate systems biology and focus specifically on changes in homeostasis in disease conditions caused by changes in inputs and outputs of organ systems

This course, as indicated, is under development. As it is finalized and implemented, we plan to share our curriculum through digital commons, as well as have our students share some of their work with the IMSA community and possibly beyond. We have not yet considered how we would connect outside the community past this, but imagine there are interesting opportunities to find.

Polish curriculum, rubrics and share more widely; engage students to do the same

Formalize a lesson plan on Zero Hunger to share at conference or workshop

Add units on climate change, work towards solving a specific target in Levels 2 and 3

I would like to incorporate a unit in Spanish III on the environment/nature, including pollution, habitats, and animals.

To continue to look for unique opportunities to send students to for service learning and to continue working with WE Schools.

I plan to continue using Digital Commons as a means to publish student work.

We are going to continue working on creating more assignments, projects that address many more goals at some level.

Plan to continue this as we have done previously.

Will continue in the future and may make it a requirement.

We will create a more quarter projects to address a number of the UNSDGs.

We are going to be intentional and mindful of the language that we use for each of our assignments and assessments in all our CS classes to address the UNSDGs.

Optimization problems in Calculus could be crafted in the context with UNSDGs.