

ESTH **newsletter**

environment • science • technology • health

Rome, Italy

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Photo courtesy of blog.adext.com

—Science Envoy Program—

The U.S. Department of State’s Science Envoys are leaders in academia, Nobel prizewinners, distinguished authors, and government advisors. Envoys are able to use their expertise and networks through the Science Envoy Program to create sustained international cooperation; strengthen bilateral science and technology relationships; advance U.S policy objectives; and reach out to foreign audiences. Science Envoys meet government officials, scientists, students, innovators, and entrepreneurs, and conduct meetings on topics at the intersection of foreign policy and science. The Science Envoys are high-profile Americans solving real-world problems with areas of expertise that include chemistry, physics, agronomy, medicine, engineering, and evolutionary biology. Since 2010, 18 Envoys have visited 43 countries across Africa, the Middle East, Central Asia, South America, Europe, and Southeast Asia and have engaged with dozens of government officials, including heads of state. With U.S. embassies’ assistance worldwide, Science Envoys convene meetings on topics as diverse as cutting-edge scientific discoveries; protecting intellectual property and commercializing patents; innovation including in the areas of oceans, emerging technology, wildlife conservation, and public health; STEM education and diversity; and energy. In some cases, Science Envoys also plan and execute regional workshops. Through the Science Envoy program, the Department of State is supporting the establishment, strengthening, and mobilization of regional and global networks of scientists around U.S. science and technology priorities.

The success of the program was highlighted in the U.S. National Academy of Science’s 2015 report “Diplomacy in the 21st Century: Embedding a Culture of Science and Technology throughout the Department of State.” **(Continued on Page 2)**



Meet your ESTH Rome team:

L to R: Caron, Federica, Claudia, Cinzia, Monique, and Christine

Caron De Mars,
ESTH Counselor

Federica Signoretti,
ESTH Specialist

Claudia Rizza,
Spring ‘19 Intern

Cinzia Zuffada,
Science Fellow

Monique Marshall,
Spring ‘19 Intern

Christine Heintz,
Office Management Specialist



Science Envoy Dr. Langer Visits Rome



Dr. Robert Langer, U.S. Department of State Science Envoy

Dr. Langer, “the Edison of Medicine,” is one of the 13 Institute Professors at the Massachusetts Institute of Technology (MIT). He runs the largest biomedical engineering lab in the world, has founded over 40 startups, has nearly 1,400 issued and pending patents, and is the most cited engineer in the world. He has received more than 220 major awards and he is one of four living individuals to have received both the United States National Medal of Science and the United States National Medal of Technology and Innovation. Langer has also received the Queen Elizabeth Prize for Engineering, considered the world’s most influential prize for engineering, and has published more than 1400 scientific articles.

The Italian National Research Council hosted a round table on “Innovation and Science,” which was followed by a visit to LUISS EnLabs, a startup incubator. Langer presented a lecture on “Entrepreneurship in Medical Technology” at the University Campus BioMedico. At LUISS Business School, his talk on “What I’ve Learned from Founding More than 40 Startups” revealed his perspective on entrepreneurship.



Langer’s research is at the interface of medicine, materials science, and chemical engineering. He has focused on novel approaches in biomaterials, drug delivery systems, nanotechnology and tissue engineering, and the U.S. approach to research commercialization. He is developing new nanoparticles to treat cancer and other diseases. Specifically, he designs polymer, lipid, and polymer-lipid hybrid nano-carriers for improved drug delivery, as well as

similar controlled delivery systems for genetically engineered therapeutic proteins, DNA, and RNA.

During these conferences, he described his impressive career, including initial failures and early skepticism from academia and the business world. He discussed the combination of nanomaterials and drugs, with the goal of developing new applications in the pharmaceutical domain. Moreover, he talked about startups and how Italians can create companies by combining research, innovation, and business. He believes that the main elements of creating a successful startup are the following: a good idea, based on a proof of concept; a good Chief Executive Officer; and enthusiasm. He also underlined the balance between science and



business, stating that the starting point for good innovation is the scientific research; patent application; and the publication of the research in an important scientific, peer-reviewed journal. After that, there is the possibility to form a startup and seek investors. He has been involved in the founding of many relevant biotech companies, such as Air (bought by Alkermes for more than \$100 million in 1999), Momenta Pharmaceutical (went public through an IPO in 2004), InVivo Therapeutics, Olivo Labs, TransForm Pharmaceuticals (bought by Johnson & Johnson for \$230 million in 2005), and Moderna (which went public in 2018 with the largest biotech IPO in history).

Langer has pioneered a technique to recreate artificial skin for serious burns, and now a cosmetic company intends to use this “wearable” skin to prolong a youthful look, getting rid of wrinkles if applied on a regular basis. Langer’s team is also working to create artificial tissues such as cartilage, bones, and nerve connections.

The purpose of his time in Rome was to build connections between in-country researchers and the U.S. scientific community; to highlight the role of science in society; to promote commercialization of patents; and inspire Italian startups. ‘About Pharma’ and many other scientific on-line outlets and daily newspapers interviewed Dr. Langer, or published articles based on his lectures that were open to the press.

Photo: Science History Institute/Wikimedia Commons

Brain Gain! Boston to Milan Scientific Research Cooperation

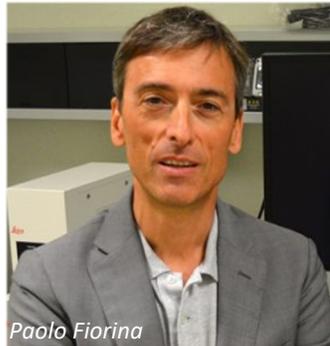


Alessandra Biffi

Two Italian medical researchers, Alessandra Biffi, MD, former Director of the Gene Therapy Program and former Associate Professor of Pediatrics, Harvard Medical School; and Paolo Fiorina, MD, former Assistant Professor of Pediatrics, Harvard Medical School, and

former Associate Scientist, Boston Children's Hospital, returned to Milan after several years of working in Boston. Together they founded a biotech startup in Milan called "Altheia Science" with a focus on developing new treatments and drugs to cure some autoimmune diseases such as multiple sclerosis and type 1 diabetes.

They have raised €9.3 million for the startup. In addition to that, they obtained the rights to use the licenses and patents that they, in part, developed at the Boston Children's Hospital. They also signed a cooperation agreement with the Boston



Paolo Fiorina

Children's Hospital, which will serve as a strategic bridge between Milan and Boston. The two scientists are being highlighted as role models for other Italians to conduct excellent research in the United States, return to Italy, and continue to carry on investigations to the benefit of both societies, their institutions, and ideally the world's stock of effective medical therapies.



Photos: Altheia Science

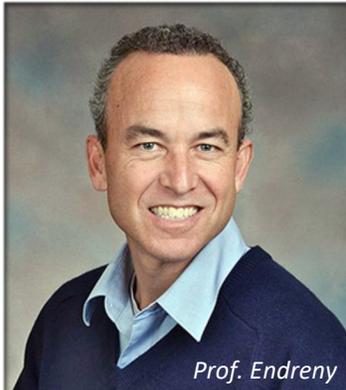
Apple, Cisco, and Deloitte's Academies in Naples Create Digital Opportunities

On December 12, Consul General Mary Ellen Countryman and her staff from the Economic and Public Affairs sections visited the three advanced training academies created by U.S. companies in cooperation with the Federico II University of Naples. Accompanied by Professor Giorgio Ventre, who runs and promotes all of the university's training partnerships, the delegation met with course managers, professors, and students involved in each project. The Apple Developer Academy, launched in 2016, is currently training its third class of over 350 app developers and managers. Taught entirely in English, the interdisciplinary program unites coding with design, business management, and the development of the skills needed to launch and manage successful projects and startups. Thirty percent of this year's class comes from outside of Italy, including students from Europe, the Middle East, and the Americas; among them are three U.S. citizens.

The delegation then visited Deloitte Digital's DIGITA Academy, which is training its second class of 50 future managers for the digital and technology-driven businesses of the future. About half of the 2018 graduates work with Deloitte and the other half are in technology companies throughout Italy. Next, the delegation went to the Cisco Digital Transformation Lab and Networking Academy, the newest interdisciplinary training project, which started training its first class of 20 network technology managers in January. Cisco already collaborates with the university and local high schools on shorter certification programs that have reached thousands of students throughout the Naples area, some of which are in difficult neighborhoods.

- [Cisco Digital Transformation Lab and Networking Academy](#)
- [Developer Academy](#)
- [Digita](#)

National Academy of Engineering (NAE) Expands its Grand Challenge Scholar Program to Italy



Prof. Endreny

On December 4, Joshua Lawrence and Antonella Di Vaio from the Economic and Public Affairs sections of the U.S. Consulate in Naples, attended a conference at the University of Salerno promoting the National Academy of Engineering's [Grand Challenges Scholars Program](#) (GCSP). The

program's spokesperson, Professor Theodore Endreny from Syracuse University in New York, was a Fulbright scholar in Naples. The Salerno visit was part of a four-city tour of Italian universities to promote the program. Professor Endreny and Professor Andrea Micangeli, the GCSP's focal point in Italy and an engineering professor at Rome's La Sapienza University, also met with faculty, researchers, and students at the Politecnico University in Milan, the University of Florence, and La Sapienza University of Rome. The goal was to illustrate how Italian research departments can join the GCSP by promoting training programs that link students with over 55 U.S. universities (as well as two in Australia, six in Asia, and La Sapienza in Rome) at every level of study, from undergraduate programs to doctorates. Europe's first partnership school is the Energy Engineering Department of La Sapienza, but the University of Salerno hopes to become the first European university to join with a life sciences program when its Medicine and Pharmacy Departments sign on. The NAE's Grand Challenges for Engineering program, created in 2008, promotes an aspirational vision of what engineering needs to deliver to all people on the planet in the 21st century. The vision is the "continuation of life on the planet, making our world more sustainable, secure, healthy, and joyful." The Grand Challenges Scholars Program is the educational program supporting this challenge.

In this GCSP, the NAE does not dictate an engineering curriculum to any university. The GCSP simply identifies five competencies that a student must achieve to prepare them to address the Grand Challenges for Engineering found globally. Each adopting university defines its supplemental approach to educating its students about each of the five competencies during its undergraduate engineering degree program framework. The five student competencies in the GCSP are: talent development; multidisciplinary competence; understanding the necessity of a viable business model for solution implementation; understanding different cultures to ensure cultural acceptance of proposed engineering solutions; and understanding that engineering solutions should primarily serve people and society, reflecting social consciousness.



Joint Committee Meeting (JCM) for U.S.-Italy Science and Technology Cooperation

The 13th U.S.-Italy Joint Commission Meeting on Science and Technology (JCM) convened December 3-6 in Washington, D.C., culminating in the signing of a joint declaration at the U.S. Department of State. Italian and U.S. government agencies and research organizations met throughout the week to discuss advancements, continued research cooperation, and new initiatives to increase collaboration in areas such as physics, telecommunications, health and life sciences, forestry, and resilience to natural disasters. Notably, the U.S. Department of Energy and the Italian Ministry of Education, Universities, and Research agreed to collaborate on particle accelerator construction at Fermilab. Furthermore, 18 new Italian research projects, managed in collaboration with U.S. government-funded American institutions, will be financed by the Italian government. The 13th JCM coincided with the 30th anniversary of the signing of the original U.S.-Italy Science and Technology Cooperation Agreement.

Photo: SUNY College of Engineering, Science, and Forestry



U.S. Embassy Rome conducts Public Forum on Responsible Communication in Science Journalism to dispel Myths and Misinformation

On December 14, 2018, the United States Embassy in Rome coordinated a public event at the Centro Studi Americani (Center for American Studies) entitled: *Communicating Science to the Public for Journalists, Educators, and Scientists: Debunking Urban Myths and Misinformation*.



More than 30 professionals and students attended the event. Special guest speakers included Veronica Dudo, News Anchor & Journalist at WJLP-TV New York, and Claudia Di Giorgio, Managing Editor, *Le Scienze* (Italian edition of Scientific American). Professor Giandomenico Boffi, Faculty of Economics and Head of the Laboratory of Mathematical Sciences at the University of International Studies (UNINT) in Rome, joined the discussion panel with all of the speakers.

In her introductory remarks, Embassy Science Counselor Caron de Mars spoke about *“Debunking Urban Legends and Focusing on the Facts.”* She raised concerns about urban myths that circulate among both American and Italian societies, ranging from the notion that 1969 moon landing was broadcast from a Hollywood studio, to catching a cold if you go outside with wet hair, and urged participants to get information from experts and authenticated sources. She emphasized the importance of good journalism and science communication, and urged the audience to check facts.

Embassy Science Fellow Dr. Ranjan Gupta provided a perspective on the age-old practices of the scientific community and why they are hesitant to communicate with the public in his talk, *“Scientists and Journalists – The Cultural Divide: Can We Bridge the Gap?”* He emphasized that scientists have recently realized the need to engage with the public directly to fight back against pseudoscience and manipulation.

Veronica Dudo, an award-winning media professional, talked about “Fact or Fiction? How to Find the Truth.” She spoke out against those who use publicity gimmicks for sensationalism and those who do not conduct adequate research. She also emphasized compassion and humanity so that innocent people are not exploited for the gains of news media.

Claudia Di Giorgio, a seasoned free-lance writer and science journalist / broadcaster, made some pertinent points in her presentation. Drawing from her experience at *Le Scienze*, she asked, “What is true science and what is not?” She pointed out that science is not a static subject, but one that evolves as new facts are discovered through further experimentation. What is true today may not be true tomorrow. Therefore, it is important to distinguish between myths and scientific facts that may change over time.

The interactive panel discussion was peppered with thought-provoking questions and comments from the speakers and the audience. Prof. Boffi discussed how limitations in computer algorithms may modulate news popularity. For example, if the number of “clicks” or “hits” are a measure of ratings and popularity, computer search-engines may be fooled by some savvy users who appear as multiple users, thus giving erroneous statistics. There is still room for improvement in the field of machine-learning.



Overall, the event generated interest and discussions from all attendees. Rome’s Science Diplomats Club, the ESTH intern’s university, Embassy Rome Public Affairs, and the American Studies Center all promoted the event. It was particularly encouraging to see many enthusiastic young men and women in the audience. The concept for this event was provided by Caron De Mars. The event was coordinated by Embassy Science Fellow Ranjan Gupta, with help from ESTH Intern Claudia Rizza, and ESTH Office Manager Christine Heintz.

ISSNAF Recognizes Five Outstanding Scientists at Annual Event in Washington, D.C.



2018 Award Recipients

Five early-career Italian scientists received prestigious 2018 Italian Scientists and Scholars in North America Foundation (ISSNAF) Awards at the annual event hosted by the Italian Embassy in Washington, D.C., on October 23. To celebrate its tenth anniversary in 2018, ISSNAF instituted five awards. Italian Ambassador to the United States Armando Varricchio said, “Italy is proud of the award recipients. They are exemplars of the professionalism and commitment that characterize the young Italian scientists operating in North America, and they represent areas of scientific research where Italy excels.”



Lorenzo Brunetti, M.D., PhD, works for Baylor College of Medicine in Houston, TX, and has developed a

technique to efficiently modify the DNA of healthy and cancerous blood cells. He is currently applying this technique to discover new molecular mechanisms that cause leukemia. Roberta Zappasodi, who has a PhD in medical biotechnology, works at the Memorial Sloan Kettering Cancer Center in New York, NY. She studies action mechanisms aimed at eliminating resistance to a class of pharmaceuticals for immunotherapy, called a “checkpoint blockade.” Riccardo Manenti is a quantum engineer with Rigetti Computing, a Berkeley, CA startup,

working in quantum computing with the objective of building the first high-performance quantum computer. Originally a physicist, he has developed a quantum algorithm to solve a clustering optimization problem in a 19-qubit quantum computer. Antonio D’Amore, presently with the University of Pittsburgh, has a PhD in Biomechanics and Tissue Engineering. He works in new prosthetic technologies to create a cardiac valve that can be customized to the individual human body, and that would be absorbed and substituted by tissue produced by the individual patient. Sara Buson has a PhD in astrophysics, worked at the NASA Goddard Space Flight Center, and is now a professor in Germany. Buson led the discovery of a source of high-energy cosmic neutrinos accompanying cosmic rays. In 2017, she was able to observe first a neutrino and later a beam of gamma rays emitted from a source in the same region as the neutrino, which localized a cosmic neutrino’s source for the first time. The Life Achievement award went to Emilio Bizzi, a neuroscientist originally from Rome who is teaching at MIT in Boston.

ISSNAF is a non-profit organization founded in 2008 by a group of 36 distinguished Italian scholars, including four Nobel Prize winners. This network represents the Italian intellectual diaspora in North America, who work to build bridges between the two sides of the Atlantic, and share the heritage and accomplishments of these communities.



2018 Award Recipients

Photo: ISSNAF Annual Event Page

Brown Bag Federal Women’s Program Leadership Lunch



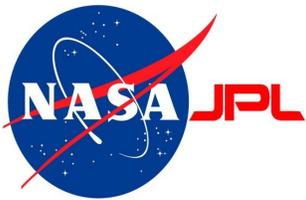
Cinzia Zuffada (center) with Brown Bag attendees

On January 15, during a brown bag Leadership Lunch, Dr. Cinzia Zuffada, Associate Chief Scientist at NASA’s Jet Propulsion Laboratory (JPL) and our Embassy Science Fellow, gave her perspective on her career and leadership. She described the impressive development of her career. She was raised in a small Italian town, and then studied at the University of Pavia. She did post-doctoral work at the

California Institute of Technology (CalTech), which led to her career at the Jet Propulsion Laboratory. Her move to the U.S. was very challenging, and she underlined the cultural differences between

Italy and the United States. She described how she felt as a foreigner living in another country.

Her career spans academic research in electromagnetic theory; program management in research and development; and fostering collaborative programs between the United States and Italy. Among the many remarkable projects she has worked on, one standout is the Global Navigation Satellite System (GNSS) Reflectometry and Scatterometry for Earth Remote Sensing project. When she chose this specialization, very few people were already working on it. She observed many opportunities in this new field, and strategically decided that it would be easier to make an impact. NASA



employs this system to measure sea surface winds using signals coming from the GNSS, which are reflected off the surface of sea and sea ice, and then collected by a space-based receiver.

Answering a question about her expectations for her fellowship with the U.S.

Embassy to Italy, she said she would like to strengthen the relationship between the Italian Space Agency (ASI) and NASA; to communicate with Italian agencies focused on the environment; and to sensitize the Italian earth-observation community to environmental and air quality issues and NASA satellite data.



International Day of Women and Girls in Science Panel

On February 11, four women from diverse science, technology, engineering, and math (STEM) backgrounds spoke at a Federal Women’s Program event celebrating the International Day of Women and Girls in Science. The panel included experts in physics, geology, medicine, conservation, geo-spatial mapping, and space technology.

Francesca Tarani is currently in her second year of medical residency for pediatrics at the La Sapienza University of Rome. During her time in medical school, she spent six months studying in Spain in the Erasmus program (an EU-sponsored student exchange). She was then able to use her new Spanish skills at the Miami Children’s Hospital during training in the United States. Tarani ranked 850 for 7,000 residency slots out of 16,000 aspiring doctors that have passed the national specialization school exam.



Maria Fabrizia Buongiorno is the Director of Technology Research at the National Institute for Geophysics and Volcanology, where she has coordinated the Remote Sensing Research Unit

Photo: Sierra Lobo, Inc. and Wikipedia

International Day of Women and Girls in Science Panel (cont.)

for 12 years. She has an academic background in geology and has dedicated her career to space observation and remote sensing techniques. She co-chairs the bilateral Working Group for Earth Science and Cultural Heritage as part of the U.S.-Italy Joint Commission on Science and Technology Cooperation.



Istituto Nazionale di Geofisica e Vulcanologia

Jeannie Whitler is a Program Analyst with the National Park Service (NPS) working to protect large, collaborative landscapes and ecosystems. She has done conservation projects in Kenya, Haiti, and the Seychelles; worked in cartography and GIS mapping; and especially enjoyed being an NPS Park Ranger.



Cinzia Zuffada is Associate Chief Scientist at NASA's Jet Propulsion Laboratory and the Science Fellow at the U.S. Embassy to Italy in Rome. Her career includes academic research in electromagnetic theory, program management in research and development, and fostering collaborative programs between the United States and Italy. Zuffada has received the NASA Medal for Outstanding Leadership and the

Knighthood of Order of Merit of the Italian Republic.

The majority of the women grew up with a parent or relative who worked in STEM-related fields. They cite their family members as their inspiration to pursue their careers. Accordingly, the women encouraged families and teachers to foster young girls' curiosity in STEM. They warned against creating a false image of exclusivity. Zuffada said, "The field is just as open to women as it is to men."

The panelists discussed the future of technology as one that goes hand-in-hand with humans. Although there are many advancements in robotics and remote medicine, for example, Tarani noted that doctors will still be responsible for knowing how to correctly perform procedures by hand.

Buongiorno mentioned the growing relevance of big data and how future jobs will rely on this field. Research will become more exciting and will create more opportunities in the generations to come.

The women all agreed that the big issue remaining on the table is climate change, the prospect of which will greatly influence future STEM careers, while creating more jobs to solve related problems.

To conclude, Zuffada remarked, "We are resources for the future—men and women."

To see a Tweet from the event, click [here](#).



Pictured (left to right): Zuffada, Whitler, Buongiorno, Tarani

Photos: Wikipedia and National Institute for Geophysics and Volcanology

Italian Contributions to NASA's InSight

On November 26, [NASA's InSight](#) probe landed on Mars. The Italian Space Agency (ASI) and Italy's space industry contributed to the mission. The *Sardinia Deep Space Antenna*, a satellite dish of 64 meters in diameter near Cagliari, collected the signals transmitted by the probe until the completion of the landing in order to record and analyze the lander's robotic movements during the different stages.

Italian star trackers (small star-gazing telescopes) record the positions of the stars and communicate with ground computers to guide spacecraft on the right course. These devices were created in Florence and have been used since the 1960s. Hundreds of them have been installed on satellites and probes built by many countries. The Laser Retroreflector Investigations - LaRRI – equipment was invented by ASI and Italy's National Institute of Astrophysics (INAF). It was mounted on the top deck of the probe to enable passive laser range finding by orbiters, and will continue to operate even after the lander is retired. LaRRI allows scientists to establish the accurate position of the vehicle; to conduct experiments on gravity and planetary movements; and to measure the atmosphere of Mars.

Italy is the third largest contributor to the European Space Agency (ESA), behind France and Germany, and it supports 40 percent of all [Exomars](#) missions. In 2020, an Italian rover will run on the red sand and an Italian robotic drill will explore the underground in search of evidence of past life on Mars. Together with Leonardo, Thales Alenia Space, and Ohb, more than 200 small Italian companies are considered to be part of the new "Italian space economy."



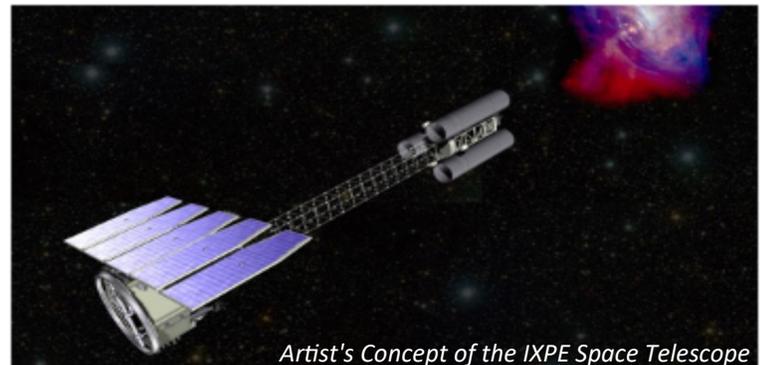
European Space Agency



InSight landing

IXPE

Have you ever wondered how astronomers study exotic astronomical objects, like black holes and neutron stars? The ESTH team met with three NASA astronomers who are leading the Imaging X-ray Polarimetry Explorer (IXPE) project. On November 6, Martin C. Weisskopf, Brain D. Ramsay, and Stephen L. O'Dell visited the U.S. Embassy to Italy in Rome to discuss both IXPE (pronounced "ix pa") and some other past X-ray astronomy projects.



Artist's Concept of the IXPE Space Telescope

These three scientists have each worked at NASA for over 30 years. One of their first projects was the Chandra X-ray Observatory, which launched in 1999. Chandra is part of NASA's "Great Observatories" fleet, alongside the Hubble Space Telescope. Chandra obtains X-ray images to analyze exotic environments and the structure and evolution of the universe. Originally designed to operate for three to five years, this sophisticated X-ray telescope continues to observe celestial X-ray sources from its highly elliptical orbit, which extends about a third of the way to the moon.

IXPE is set to launch in 2021. The project, which is a collaboration between NASA and the Italian Space Agency (ASI), will provide insight into X-ray production in objects such as stellar and supermassive black holes, neutron stars, and pulsar winds. It will do this by measuring the polarization state of X-ray light from astrophysical sources. These X-ray observations will provide scientists with information on how strong the polarization is and in which direction it is oriented. From there, scientists can test radiation theories and astrophysical source models.

Selected in 2017 as a NASA Astrophysics Small Explorer, the IXPE is similar to a project originally proposed in 2007. The 2017 proposal was more successful because of increased interest in astrophysics with X-ray polarization,

Photos: IXPE Home and MARS InSight Mission Landing

IXPE (cont.)



Image from the Chandra X-ray Observatory: a jet emanating from the black hole of Centaurus A

more mature advanced technology, and greater international collaboration. IXPE is largely funded by NASA and ASI, with Japanese contributions as well.

To learn more about [Chandra](#) and [IXPE](#) click here!

NASA Project: SERVIR

On November 9, the ESTH team met with NASA scientists Daniel Irwin, Kel Market, and David Saah, who work on [SERVIR](#), a 15-year joint venture between NASA and the U.S. Agency for International Development (USAID). SERVIR provides satellite-based Earth monitoring data from over 40 countries to improve environmental decision-making in developing nations. The data gathered from the satellites provides information to help national and local governments, forecasters, and scientists track environmental changes, ecological threats, and natural disasters. The information also aids in risk management assessments of threats related to food and water security, land cover, flash floods, air quality, and health. In addition to environmental changes, the information can be used to analyze sociological conditions, such as gender, and study how these conditions affect vulnerable populations. Daniel Irwin, the co-creator of SERVIR, was inspired almost two decades ago to initiate the project when he realized that

some valuable satellite datasets were not being used to their full potential. At the time, most of the information being collected was used for academic purposes (publishing papers and making presentations), but not being applied to solve real-world problems. With the assistance of USAID, SERVIR has been able to partner with existing organizations with similar mandates in other countries and establish hubs there. Currently, hubs exist in Kenya, Niger, Nepal, and Thailand, with another one planned in Colombia in 2019.

SERVIR has collaborated with the Food and Agriculture Organization (FAO) to combine with and enhance one of their previous software programs. The FAO's desktop program, Collect Earth, merged into Collect Earth Online (CEO), a robust, freely available service that helps countries throughout the world better classify and monitor their land cover. Through remote sensing and other tools, CEO helps to validate data for forest land cover, previously obtained from conventional surveillance and mapping.



To keep up to date on all of SERVIR's activities click the link [here!](#)



NASA and the SERVIR team also participate in WiSci – a State Department-run science camp to empower high school girls in Africa. The camp equips young women with Science, Technology, Engineering, and Math (STEM) skills to be competitive with their male counterparts.

Photos: ESA and SERVIR

Revisiting Italy's Measles Vaccination Policy following Major Outbreaks



A demonstration against compulsory vaccinations in Rome in 2017

Italy reported over 2500 cases of measles (20 percent of all European cases), including seven deaths, in 2018. A new law compelling children 0-16 years of age to have ten vaccinations in order to enroll in school came into effect in August 2017. Italy's coalition government, which includes the Five Star Movement (M5S) and the League political party, pledged to scrap the vaccination obligation during the run-up to the March 2018 elections, courting the so-called "anti-vax" vote. In July 2018, Health Minister Giulia Grillo (M5S) announced that parents would not have to deliver doctors' verification of immunizations, but could provide a self-certification. A false self-certification is considered a penal violation in Italy. Grillo explained during a press conference, "We want to spur school inclusion and simplify rules for parents." She was pregnant at the time, and said she planned to vaccinate her own baby. She has publicly stated she supports vaccination, but has added that current rules are too restrictive. (The Italian public health service provides all 10 vaccines for free.) The Health Protection Corps of the Carabinieri (NAS) enforces the validation of vaccine certifications throughout Italian schools, initially focusing on children up to six years old. NAS checked 15,400 certifications and discovered 22 infractions (0.14%) in its initial findings. Meanwhile, the U.S. Centers for Disease Control and Prevention have a [travel alert](#) for U.S. visitors to Italy, which recommends the appropriate measles, mumps, and rubella (MMR) vaccination.



Health Minister Giulia Grillo

Science Fellow and Secretary General publish Op-Ed

In today's highly interconnected world with rapid international travel, a contagion can spread across the globe in a matter of hours. Urbanization, population growth, mass human migrations, and global climate change contribute to the spread of newly emerging or re-emerging infectious diseases. Moreover, no one can predict acts of bioterrorism. Apart from the toll on human lives and the impact on health systems, epidemics have the potential to destabilize governments, challenge economic stability, and paralyze the workforce.

On November 6-8, Health Ministers and senior officials from countries and multilateral and non-governmental organizations from around the globe

gathered in Bali, Indonesia to renew their commitment to the Global Health Security Agenda (GHSA) and adopt a 5-year framework for the next phase of GHSA, now called GHSA 2024. Italy played a central role as the Chair of the GHSA Steering Group in 2018, during this critical transition period. GHSA was launched in 2014 when like-minded countries joined together to strengthen national and global capacities to prevent, detect, and respond to human and animal infectious-disease threats of pandemic potential, whether naturally occurring, accidentally released, or deliberately spread. GHSA uses a multilateral and multi-sectoral approach, engaging sectors including health, security, agriculture, development, defense, and foreign affairs. Partners include non-governmental organizations, civil society, the private sector, universities, foundations, and key multilateral organizations, such as the World Health Organization (WHO), World Organization for Animal Health, the U.N. Food and Agriculture Organization, the World Bank, and Interpol.



GHSA logo

Science Fellow and Secretary General publish Op-Ed (cont.)

During the first phase, GHSA governance was managed by a 10-country Steering Group, which the U.S. chaired in 2014. As the 2018 Chair, Italy reinforced coordination and fostered communication among members and with the larger global community, encouraging active participation by non-health sectors, as part of the multisector approach. GHSA 2024, officially beginning in January 2019, expands this governing partnership to 16 members, including countries, multilateral organizations, and non-governmental stakeholders, including the private sector. By elevating global health security as a national and multisector issue, GHSA seeks to continue bolstering country compliance with international legal instruments, such as the WHO’s International Health Regulations (2005). Since infectious threats do not take breaks, nor respect international boundaries, GHSA remains relevant. In Bali, the U.S. pledged \$150 million, adding to its previous \$1 billion commitment from 2014-2019. It is heartening to see the continued commitment of nations and partners to this critical mission. Already, we are seeing results, such as more rapid detection and response to deadly outbreaks in Africa and Asia. As the Netherlands takes on the Chair of the Steering Group in 2019, we hope that this collective endeavor will help the world be more prepared in the years to come.



GHSA member countries

Photo: Global Health Security Agenda

Diana Allen – “Healthy Parks Healthy People” and Ninfa Gardens



The U.S. government sponsors a Federal Women’s Program (FWP), established in 1967, to foster the employment and advancement of women. U.S. embassies worldwide participate, and in recent months, the U.S. Tri-Mission community in Rome launched its series of “Leadership Lunches” during which prominent women speak to men and woman in the Tri-Mission community. Our first FWP Leadership Lunch featured Diana Allen, the National Park Service (NPS) Chief for Healthy Parks Healthy People, who was in Rome to speak at an international conference.

Diana joined NPS in 1999 and represents the NPS in inter-agency health-related working groups. She started her career with corporate garden and landscape designs and then moved on to larger landscape projects like regional greenway designs and watershed planning. Today, Diana works on the Healthy Parks Healthy People program. Healthy Parks Healthy People is a global movement that harnesses the power of parks and protected areas to contribute to human wellbeing and ecosystem health. The program is steadfast in its holistic approach to health, and promotes the fact that



Photos: NPS

Diana Allen – “Healthy Parks Healthy People” and Ninfa Gardens (cont.)

all parks—urban and wild land—are cornerstones of people's mental, physical, and spiritual health, and their social well-being, as well as of the sustainability of the planet.

The embassy community enjoyed learning about the different ways the NPS is promoting parks as a health resource—from the revival of Anacostia in Southeast D.C., to the faith-based programs that protect sacred sites in the parks, to a new Volunteer Health Ambassador program. Diana not only inspired us to follow our passions and career goals, but she also encouraged us to take our health to the next level by spending time outdoors and becoming the next generation of conservationists.

A day later, Diana expanded on the Healthy Parks Healthy People program at an international conference on health and climate change sponsored by Italy’s Higher Health Institute (ISS, equivalent to the U.S. National Institutes of Health). Her panel was moderated by Maurillio Cipparone, who masterminded the Children and Nature



Network for Italy. Maurillio, now retired from the Italian park system, is still active in Italian conservation, youth, and park activities. He invited Diana and ESTH Counselor Caron De Mars to tour Ninfa Gardens after the conference.

Ninfa Gardens is an enchanting natural monument consisting of 20 acres filled with medieval ruins; oaks, cypresses, and poplars; grassy meadows and waterways; and a wide variety of exotic plants from all over the world. The gardens were first described by Pliny the Younger (61-113 AD), who was a lawyer, author, and magistrate in ancient Rome. Diana and Caron were delighted by the ancient gardens, which were abloom (even during their early December visit) with roses, bleeding hearts, other colorful plants, and even groves of ripe oranges and grapefruit. The gardens, cared for by the Italian Roffredo Caetani Foundation, are open to the public by appointment and with a guide from April to November, so Diana and Caron felt especially privileged that Maurillio gave them a glimpse of this magical place.



Diana Allen and Caron De Mars



Biodiversity Carabinieri Engage with U.S. Counterparts on Forest Management

Dr. Raymond Sauvajot, Associate Director for Natural Resource Stewardship and Science at the U.S. National Park Service (NPS), spoke at the Third International Conference on Environment, titled “Biodiversity: Engine of Life on Earth,” organized by the Carabinieri division focused on the Care of Biodiversity and Parks (Biodiversity Carabinieri) in Rome on November 13-15. The Biodiversity Carabinieri valued the lessons learned from the NPS and had the opportunity to continue the dialogue during the Joint Commission Meeting (JCM) for U.S.-Italy Science and Technology Cooperation in Washington, D.C., on December 5-6, through a workshop on forestry issues. U.S. Forest Service (USFS) and Environmental Protection Agency (EPA) representatives joined NPS for this robust conversation with the Carabinieri. Italy’s priorities included monitoring the health status of forests, air pollution measurements, and forest inventory. USFS described their Inventory, Wildfire, and Forest Health Protection Program, as well as the most frequent forest diseases. The EPA representatives from the Office of Research and Development and the National Center for Environmental Assessment focused on how pollutants caused by wildfires may impact both human health and the environment. After the meetings in Washington, a Biodiversity Carabinieri team visited Shenandoah National Park, where they were hosted by Natural Resource Chief Jim Schaberl and



Caron De Mars hugging a beech tree



Hiking in Abruzzo National Park

his staff on visits to Big Meadows and the Byrd Visitor Center. In Colorado, the Carabinieri visited Rocky Mountain National Park and joined a team from Colorado State University and the U.S. Geological Survey to participate in the weekly sampling of precipitation and surface water at the Loch Vale Watershed, a National Atmospheric Deposition Program (NADP) field site inside the park. They also visited Arapaho and Roosevelt National Forests and Pawnee National Grassland Forest for USFS briefings on insects and disease, viewed Christmas tree cutting areas, and learned about recreational shooting issues. In Fort Collins, they visited the NPS Natural Resource Stewardship and Science Directorate, and met with the staff from both the Air Resources and the Biological Resources divisions. Carabinieri Lt. Col. Giancarlo Papitto described his trip as a “wonderful experience” and said he and his team appreciated the networking and learning opportunities. He and his team hope to encourage the establishment of a sister park relationship between a park in Italy and one in the United States.



Photo: Wikipedia

Ambassador Eisenberg Meets Environment Minister Sergio Costa



Minister Sergio Costa (R) and Ambassador Eisenberg (L)

On October 23, Ambassador Eisenberg met with Minister Sergio Costa to talk about U.S. and Italian environmental priorities. One priority of mutual interest is food waste. The U.S. Environmental Protection Agency (EPA) and the Italian Ministry of Environment organized a food waste event in Bologna in 2017 as part of the G7 Environmental Ministry Meeting, and EPA and Italian officials participated in an EU-organized food waste webinar in November 2018. EPA and Italian food waste experts had a food waste side event discussion at the U.N. Environment Assembly-4 in Nairobi on March 13, 2019, and the interaction will continue at the next G7 Environment Ministers' Meeting in May. Minister Costa expressed the hope that this bilateral cooperation on food waste would attract the EU's attention to the topic and increase public awareness.

Turning to the global level, Minister Costa highlighted Italy's 2017 commitment during the G7 to open a sustainable development center for Africa, which subsequently opened in Rome on January 21 (see the following article on the Africa Center for Sustainable Development – ACSD.) In addition, Minister Costa noted that Ministry of Environment Director General La Camera was Italy's candidate to be the next Director General of the International Agency for Renewable Energy (IRENA). (Voting took place in January in Abu Dhabi, and La Camera was elected DG of IRENA. He will assume his position in April.)

At the local level, another area of mutual interest is cleaning up litter and city beautification. Along those lines, the U.S. Embassy partners with a grass roots NGO that cleans cities all over Italy. Local clean-up event organizers Retake Roma have

slated Sunday, March 31, for the clean-up event with Ambassador Eisenberg, who has now sent invitations for that date, and who invited Minister Costa during their October meeting. We look forward to a continued strong relationship between the Embassy and the Ministry of Environment.

Italy Inaugurates the Africa Center for Sustainable Development

Italian Prime Minister Giuseppe Conte, Environment Minister Sergio Costa, Food and Agriculture Organization (FAO) Director General Graziano Da Silva, and United Nations Development Program (UNDP) Administrator Achim Steiner inaugurated the Africa Center for Sustainable Development (ACSD) in Rome on January 28. The ACSD is a joint initiative of the Italian Ministry of Environment, FAO, and UNDP. The Italian government established the Center to facilitate coordination among the G7 and African countries on common initiatives, and the exchange of information to achieve the Sustainable Development Goals (SDGs) outlined in the UN 2030 Agenda for Sustainable Development.



The Center will provide a fast-track, demand-driven mechanism that will help African countries access grant resources that support 1) policies, initiatives, and best practices on climate change and natural disasters; 2) climate-smart agriculture and food security; 3) access to water and clean energy generation; and 4) progress on the SDGs in Africa, all with consideration for gender issues. The Italian government contributed \$2.96 million to a trust fund managed by UNDP to support the Center. In addition to hosting the Center, UNDP will provide its extensive network



FAO Director-General José Graziano da Silva

Photos: Wikipedia and FAO

Italy Inaugurates the Africa Center for Sustainable Development (cont.)

and global expertise to enable countries to access the available resources. The Center will have a staff of fifteen, who will consult with an advisory committee comprised of African ministers.

“Sustainable development in Africa is a priority of Italy's foreign policy. Security, migration, economic growth, human development, and climate change represent a shared destiny,” Italian Prime Minister Giuseppe Conte said at the ACSD ribbon-cutting ceremony. He added that the EU should be more active and invest more in Africa. “We cannot protect our planet if we don’t start from Africa,” Environment Minister Costa said. “One of the projects that I have in mind,” Costa added, “is the sustainable development of the Sahel belt, which crosses over ten African countries, and is strongly affected by desertification and climate change.” Several ministers from African countries attended the inauguration and participated in a round-table discussion, along with Cardinal Peter Turkson, prefect of the Vatican's Dicastery for the Promotion of Integral Human Development, and Ibrahim Thiaw, the UN Secretary General's Special Adviser for the Sahel.



(L-R) Italian Premier Giuseppe Conte, Italian Minister of the Environment Sergio Costa, FAO Director General Graziano Da Silva and UNDP Administrator Achim Steiner

Fire at Rome Trash Processing Facility Causes Health Hazard

On December 11, the Salario waste treatment and recycling plant (TMB) managed by AMA, Rome’s municipal trash company, caught fire leading to detected dioxin emissions 60 times above the permitted limit, according to Marco Lupo, Chief Executive Officer of Lazio's Regional Environmental Protection Agency (ARPA). The fire’s thick smoke and smell reached northern areas of the city and citizens were advised to keep windows closed. The Public Prosecutor’s Office has begun an investigation to establish the cause of the fire, noting also that several surveillance cameras were damaged in the area around TMB in the week prior to the fire’s outbreak.



Before the fire, all of Rome’s waste was temporarily sent to Salario TMB and Rocca Cencia for processing before being sent to other parts of Italy and Europe. The fire destroyed the trash processing machinery, however, leading Rome Mayor Virginia Raggi (Five Star Movement) to sign an agreement with Aprilia TMB management allowing AMA to send 400 tons of waste per day to the Aprilia plant for a month at the cost of €160 million. Raggi made an appeal to other regions to cooperate and support AMA, and requested that the Abruzzo Region accept 70 tons of waste a day.

Rome is not the only Italian city suffering garbage fires. Problems related to excess trash at Italian dumps have

Fire at Rome Trash Processing Facility Causes Health Hazard (cont.)

increased since China stopped accepting 23 types of trash, including plastic bottles, from Europe on January 1, 2018. According to [Milano Today](#), by mid-October 2018 there had been 17 rubbish fires in Lombardy's waste storage centers. An October 17 garbage fire north of Milan resulted in city officials requiring children to stay indoors for the day due to poor air quality. Italy's most infamous cases of toxic waste pollution to date are in the southern region of Campania, nicknamed "[the Land of Fires](#)," due to the dozens of fires that break out there each year, reportedly associated with illegal dumping and the Camorra crime syndicate.



Smoke from TMB

Farewell to Stefano Marguccio

Deputy Chief of Mission Kelly Degan and ESTH Counselor Caron De Mars attended the farewell festivities for the Environment Minister's Diplomatic Advisor, Stefano Marguccio. Stefano has a Law Degree, in addition to Masters Degrees in Diplomatic Studies and Public Administration Management. After joining the diplomatic corps in 2004, he served in Albania, Strasbourg, and the Italian Foreign Ministry in Rome, before becoming the Diplomatic Advisor to the Minister for the Environment, Land and Sea in 2014. Stefano enhanced the already-solid relationship

Photo: riccardomagi/twitter



DCM Degan, Stefano Marguccio and his daughter Giulia, and Caron De Mars

between the Ministry and the U.S. Embassy in Rome, and was especially helpful when Italy hosted the G7 Environment Ministry Meeting in 2017. Truly a renaissance man, he entertained everyone with his piano playing at one G7 Environment Communiqué negotiations, has published two fantasy novels, and is a masterful equestrian. Stefano moved to Caracas, where he is now serving as Counselor in Charge of Cultural Relations, Press and Human Rights, in January 2019.



Foreign Ministry in Rome

Photos: ANSA and Report for the Italian Presidency OSCE 2018

Agricultural Biotechnology Roundtable



Dr. Wayne Parrott

On November 13, ESTH attended a biotechnology roundtable organized by the U.S. Embassy to the Holy See with Professor Wayne Parrott from the Department of Crop and Soil Sciences at the University of Georgia, Athens. A group of representatives from the Vatican, the diplomatic corps, religious orders, and Catholic universities listened to Dr. Parrott as he dispelled unfounded fears and myths surrounding the use of

biotech in agriculture. Dr. Tebaldo Vinciguerra of the Dicastery for Promoting Integral Human Development outlined the Vatican's concerns, and expressed interest in learning more about such technology through discourse. Dr. Parrott responded by addressing the Vatican's concerns from human and environmental perspectives.

Drawing from his own research and from that of others, Dr. Parrott made a case for the advantages of using ag-biotech. He included the growth of high-yielding crops, prevention of crop diseases such as late blight by engineering resistant markers, and the addition of nutritional value to eradicate preventable human diseases caused by micronutrient deficiencies. In developing countries,



Biotechnology roundtable at the U.S. Embassy to the Holy See



Dr. Tebaldo Vinciguerra

financial pressures due to crop failures cause many farmers to commit suicide; elsewhere, children suffer from blindness due to Vitamin A deficiency (VAD). Interestingly, childhood blindness due to VAD has been reported even in developed countries like Italy (see [2018 Case Report from Bologna](#)). Undoubtedly, alleviating such problems through biotechnology is a concrete way to care for humanity.

Moreover, any major adverse environmental impact due to genetically modified (GM) crops (other than potential loss of biodiversity) has yet to be demonstrated. That said, the profit-making business practices of some ag-biotech companies and their economic impact on small-scale farmers remained a topic of debate at the roundtable. Dr. Parrott noted that 80% of ag-biotech research in the United States is conducted at universities (as opposed to by industry), although some of this academic research may be funded by industry. Some audience members urged that ag-biotech should be regarded as one of the many tools to improve agriculture for food and health security, and that a holistic approach is the best. The interactive discussions clearly demonstrated that there is a continued interest in this subject; Dr. Parrott agreed there should be an ongoing dialogue among stakeholders.

Photos: University of Georgia and U.S. Embassy to the Holy See

Bike or Walk to Work Day

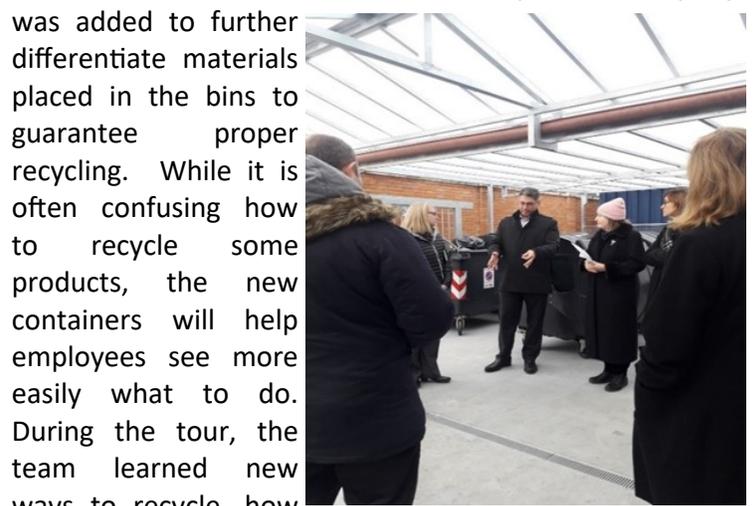


On Tuesday, November 6th, Rome's Tri-Mission Green Team hosted its second Bike/Walk to Work Day and breakfast. The Green Team encouraged everyone to ditch their cars for the day and commute in a more ecofriendly manner. Collectively, participants biked, walked, or ran over 36 kilometers (22.5 miles). In total, these eco-commuters saved over 11 gallons of gasoline and 66 pounds of carbon emissions. Green Team members contributed to a delicious healthy breakfast and greeted participants with a hot mug of coffee or tea. As this event is one to the Green Team's recruiting tools, commuters were incentivized to join the team by signing up for a raffle of a metal water bottle. The Green Team provides a way to meet like-minded people; brainstorms and organizes fun and sustainable events; and contributes to the greater Tri-Mission goals. The group meets once a month and is co-chaired by Silvia Giovanazzi from the U.S. Mission to U.N. Agencies in Rome, and ESTH Counselor Caron De Mars.

Tri-Mission Rome's New Recycling Center

What's new around the Tri-Mission compound in Rome? First, there are bins in the bathroom for only paper towels, which don't contain dyes and are recyclable. All of the kitchen areas have small brown bins for food waste and compostable containers. These enhancements contribute to the new and improved recycling regime. On January 17, the Tri-Mission Green Team visited the compound's new recycling center and waste collection facility, which was

completed in early January and opened for all of the embassies' waste to be collected and stored. Different bins are available for cardboard; plastic and aluminum; paper; non-recyclable material; used kitchen oil; batteries; and light bulbs. The new center receives a plethora of materials that the Tri-Mission's private contractor will recycle, including batteries, light bulbs, and other items for specialized processing. Glass recycling bins have been placed in the compound's cafeteria, and more bins will be added throughout the compound in the coming months. To help ensure proper recycling procedures, an amendment to the contract with the partner company



was added to further differentiate materials placed in the bins to guarantee proper recycling. While it is often confusing how to recycle some products, the new containers will help employees see more easily what to do. During the tour, the team learned new ways to recycle, how to dispose of biological waste on the Tri-Mission compound, and how the everyday decisions we make in our offices can help ensure a more positive impact on the environment. Recycling is a very important way to save the environment, and it is one critical habit to develop, if we want to leave a healthy planet for future generations.



- March 11-15 Fourth United Nations Environment Assembly
- March 22 World Water Day
- March 29 World Tuberculosis (TB) Day
- March 31 Retake Roma/Tri-Mission Green Team City Cleanup
- April 7 World Health Day
- April 15-June 15 Tri-Mission Virtual Walk-Run-Bike Challenge
- April 16 Tri-Mission Green Team Bike or Walk to Work Day
- April 15-18 Global Entrepreneurship Congress (Manama, Bahrain)
- April 22 Earth Day
- April 23-29 World Immunization Week
- April 29-May 3 Air Quality Awareness Week
- May 20-28 72nd World Health Assembly
- May 23-June 3 18th Meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Sri Lanka)
- June 4-5 Global Entrepreneurship Summit (The Hague, Netherlands)
- June 8 World Oceans Day
- September 21 International Coastal Cleanup
- October 20-24 International Desalination Association World Congress (Dubai)
- November 11-22 2019 United Nations Climate Change Conference (UNFCCC COP-25) (Chile)
- November 15 America Recycles Day



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