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>> Good afternoon. Welcome to the webinar. This is Kathy Carmichael, today the presenter is Susanne Caro. Before we get started, I will walk through a few housekeeping reminders.

>> Any questions or comments, feel free to type them in the chat box, this is on the bottom part of your screen. I will keep track of all the questions that come in. At the end of the presentation will respond to the questions. We are recording today's session.

>> The webinar will be available on our website along with a PDF of the slide deck.

>> We will also be sending you a certificate of participation using your email address, if anyone needs additional certificates, please email us. Include the title of the webinar along with the names and email addresses of those that need certificates.

>> If you need the screen to be larger, click on the fullscreen icon.

>> At the end of the session we will share a webinar satisfaction survey, we will let you know when the survey is available and the URL will appear in the chat box. We appreciate your feedback.

>> Thank you. Today I will be talking about NASA and to be more specific, gone beyond NASA.gov .

>> What will be talk about, it will be science, and this case life the universe and everything. In this presentation I will be talking about Earth science, space science and citizen science, you can get involved and be part of the work.

>> We can do a quick look at NASA.gov to see what we look at. This is a public page, it is the outreach page, you can tell that from the content, this is a great source of educational information, not so great for technical information, if you want technical content, there will be other places to look.

>> It has a really good list of programs and images. When you look for content, especially if it is something that is a current subject this is a great first stop.

>> Here we have the NASA.gov website. I'm going to point out a few quick things, we have the images watching us, the US wildfires from space, and this is an example of the material they have, if you want to see the fires in California, they will have some of this information on the front page.

>> You want to take a look at the NASA audiences and that is where you can quickly get your contact for media or education or students and look at the education link, if you enjoy NASA history, there is a link for this as well, if you want to focus on a particular area such as the solar system, moving to Mars, humans in space, have all those lined up very nicely. If you want to take a look at NASA TV this is great for inclusion into a classroom, or as part of a program, you have your galleries, which include videos as well, these are educational. If you want to know more about NASA and education there are webinars that are on resources for children, but also include where to look for content from NASA.

>> That was NASA.gov , we will look beyond the big NASA, and take a look at the universe of NASA, NASA works with a number of different agencies and they will include content from NASA and they will provide content to NASA, some of these will be far more obvious, for example, NOAA, the use a lot of satellites for the weather programming and to track conditions in the ocean, the United States forest service, that will have something as well, NASA is collecting images of the flies, the USGS has interesting connections with NASA.

>> National Institute of health, they have NASA content, so does the EPA, and even the USDA, USDA looks a little bit off in this image that is because I added a little.for Pluto, I worked in New Mexico for a long time and there was legislation passed, when Pluto was over New Mexico it was still a planet. So USDA is floating a little bit.

>> Let's talk about Earth science.

>> We think about NASA and we think about the space program and Mars, but there's a lot of content that is available that is earth based.

>> Also all the images I am using are coming from NASA sources, this is a list of some of the sources you can go to, to get information on NASA. They are not your regular NASA.gov content. I'm not going to go to deeply into AGRICOLA which is the USDA library catalog but there is content, if we have time, we

may go ahead and take a look at some of that content, we will have a lot to cover so first where we will go is NIH, there are a few different PubMed content sources, there is the regular PubMed, there is PubMed central which has access to full text, and their other fun things like the database, and will go to that site. This is our friend PubMed and you'll notice we have the database, this is the medical subject heading, and one thing I did not realize, was that NASA is a MeSH term, you can search PubMed with NASA .

>> I can give you an idea of what you can find. I am searching regular PubMed and this will give me everything, if I change this -- this will get me the open source content, one of the interesting things about searching PubMed for NASA is that you will find space and medical combinations but there are things that have nothing to do with medicine, we have the spatial factors, what you will see is a lot of materials coming from peer-reviewed resources, this is also including nongovernmental content which can sometimes be helpful.

>> If you are looking for a study that NASA supported that was coming from a private organization, or university, this can be one place where you can find that content.

>> I'm going to open up one of these, land cover, land-use changes and air pollution in Asia, we see it as a transcendent -- it is a PubMed item, we have our nice abstract here, and also some images.

>> When we are searching in this way, we will find things -- we will find things that that is mentioned for, maybe they were finding it may be this was an organization that was using data that was coming from NASA, it could be coming from a lot of different sources, you want to go ahead and perhaps to a more advanced search if you're looking for something really specific.

>> It gives you the search details, it's looking at the United States national Aeronautics and space administration, so we are seeing what it is doing when we are specifically searching NASA and it is searching NASA in all fields.

>> You can go into this and specifically remove particular terms, and search again, you can manipulate the way the search is happening.

>> This will give you a section for titles with their search terms, it will give you the dates, when you go over to publication dates, you can do last five or 10 years or you can enter in a custom range.

>> You can also look at species, if they are doing experiments on fruit flies or spiders, if you're looking for old information on primates in space, you can look for those by changing the species.

>> This is the only database I know of where you can specifically look for a species. You can also look for the type of content, this option defaults include clinical trials, you can see there's a lot here including government publication. If you want to look more for government publications, or a journal, you can select any of these and you can also exclude some as well.

>> This is the first step, there is NASA content in PubMed.

>> One of the next apps will be the forest service, this is getting closer to home, my family lives in California, they were evacuated, about a week ago and they were only recently allowed to return home, they do not lose anything, but as I was following the news, I was seeing content from NASA, this is an example where they are looking specifically at an area of a burn. When you're looking at NASA content for something that is currently going on, the forest service is using their information to determine where the borders are of a fire, they are using thermal imaging to see where the specific hotspots are, because sometimes you will have an area that is spotty, it's not a total burn, then you have hotspots that pop up that have to be dealt with.

>> They are looking at smoke, smoke go -- smoke affects people's health and EPA be picking up on some of that, they can predict where that smoke is going to go and where it will be affecting people.

>> We will take a look at tree search which was mentioned on the previous slide.

>> If you have not used TreeSearch before this is the US forest service database, because of NASA's ability to get that kind of satellite imagery to launch satellites with specific software that might be developed by another agency, they will be working together to a certain extent.

>> This is going to be not necessarily as helpful as some sources, PubMed will give you a lot more content , this is going to be far more focused.

>> If I plug-in NASA under keywords, I get one through 20 of 52 results. Not a huge number of results, but we are still getting some and these are going to be -- you will not get something that is tangentially connected to NASA. We have a NASA cold lamp processes experiment with airborne remote-sensing, we have high spatial resolution satellite observations, we are getting good NASA content and it is specifically looking for NASA in the title.

>> If we try to put down the last name of author, we careful to buy our topics if you look for NASA and fire, you can see we have three results. You can automatically see if there is something that will be there.

>> We can see how many we will get per year, and by other authors.

>> I want to play with this one a bit more to see what else I can find and if there's a better way to search by agency, I have not been able to find that yet but I had a feeling it is probably here, a lot of the research stations are connected to universities, and it might also be helpful to search by a particular research station, if you know that they are using some of that NASA content.

>> Another thing to keep in mind is these are also going to include peer-reviewed content from nongovernment publications.

>> You will also find conference reports, and some other items, various journals, in this case this is a symposium that tells you where it was located.

>> I suspect they also probably have a collection of images as well.

>> That might be another research project for later.

>> This is a closer look at TreeSearch you can see a closer look at this.

>> One of my favorites is the USGS with NASA section, it makes so much sense when you think about it, here we have a beautiful image. With TreeSearch if you know of a particular author, you can search for them in NASA and get some material to come up.

>> This image is from the land remote program, these are the islands in Finland, will take a look in the USGS publication warehouse.

>> You may have looked at this before but maybe not looking for NASA content here.

>> Here we have the publication warehouse, they have a list of the new content. If you go to the advanced search, if you go to the contributing office, it will only allow you to select some pre-entered content, and he did not have NASA actually listed here. -- And eight do not have NASA actually listed here.

>> They have the research center and the science Center. If you want to try to narrow down this is going to be the way to do it.

>> You can go to one of these and put in a term, I will put in Mars, here we will get a list of some of the results specifically relating to Mars.

>> We have the global digital database, the abstracts of the annual meeting of geologic mappers, geology maps of locations, if we open that, here we have this nice document. It will give you various information, some nice metadata, you can go to the USGS index page from here and purchase a paper version, you can also download a citation, I don't know if this will be a great -- of great interest to you it is nice to know of another place where you can download metadata.

>> Sometimes this will link you to the full text but even if it does not you have your title that you can use to go and locate a copy.

>> That is including a contributing office if you want to get rid of them, you can clear the advanced search and everything goes away. If you want to say, what is in NASA?

>> Here is another list and we have 25 items.

>> You can find a lot of interesting content here, here are the volcano observations, we have a study area included, this gives you a nice visual as to what areas are being mapped, it tells you this is from the

Journal of applied volcanology, who the publisher is, if you need to try to get something through interlibrary you can do that.

>> That is a real quick look at using the USGS publication warehouse. We will come back to USGS a little later in the program.

>> If you want technical information, there is a place for that. That is the scientific and technical information program. If you are specifically looking for earth-based content, you want to take a look at the Earth sciences division and happens to be code 610.

>> Scientific and technical information program was explored in an in person presentation at the DLC conference a couple of years ago.

>> If you can catch that, it was a really good presentation.

>> We will go back to STI. Now you can see where I got the information. You'll see we have STI audiences, including the general public. We will have the tools including the NASA for force, categories, the NRCS, the publication, a handbook for technical writers and other sources. We have a nice section that tells you what this is for and what you can find.

>> You can register which is nice.

>> We also have some general information on what the STI program is. We can go ahead and search here. I'm going to put in a term.

>> In this case I put in corn, here we have a compensation of soil moisture, and vegetation indices for estimating corn yields. We can see USDA is going to have some content going on. Once we get into that first search, we have a lot of options. We have the advanced search, or we can just use all these limiters on the side.

>> We can look for additional keywords, we can search within fields, we can look at the NASA center, the organization, subject categories, we have life sciences, space vehicles, geophysics, earth resources and remote-sensing, we can narrow things down by these.

>> I'm wondering if they will be using corn to make jet fuel. I think there is some effort to make jet fuel out of one. I'm going to go ahead and take a look at space vehicles. I want to see how corn comes up but when you will see as you can get the PDF. You have a quick abstract right here we have the date, this is also saying when it got the resource, we have a document ID number, we have a and Apollo experience report on food systems.

>> This is from 1974.

>> Here we have that is talking about problems and progress in subsystem packaging, menu design, from these, we will try to see how something grows in the low gravity environment and it might be how you feed people, what is going to happen as carbohydrates, we also have the NASA terms here. Which include carbohydrates, dehydrated food, etc.

>> We are gone beyond the freeze-dried ice cream.

>> We can also find our similar records, we can look for similar authors, we can look for fulltext online, technical report, where this is coming from, the Johnson space Center possibly.

>> The image on the slide the science universe and everything, Johnson space Center did some wonderful posters that you can download and print. We also have space vehicles here, we can go ahead and continue to search through this and that is one way we can get those hard science technical reports.

>> I will point out to have a whole section on search tips, they have start your search, refine your search, and get your document. If you are struggling with this you can go ahead and take a look at the search tips and remind yourself, maybe that is why I am not getting everything I thought I was going to get.

>> This is a very fun site, I highly suggest you play with this a bit.

>> They also have this great site, plants in space. I was try to make sure I have a few slides as well just in case my Internet dies or if for some reason the site is undergoing maintenance.

>> Something else that will happen is it will sometimes highlight your terms so you know exactly where it is coming up.

>> There are some more general sources for this kind of data, one is data.gov, there are over 33,000 data sets under NASA.

>> One morning I will throw out about data.gov, the links do not always work. I think with this site, when it first started, a lot of agencies but the content in, but I don't know how well that has been maintained. So if we go to data.gov, it's a very basic search. You can specifically look for something that is already put into a category, like the ocean, climate, or agriculture, or you can just put in a term.

>> Once you get into the site, you're going to have all those limiters, and these include data set types, tags, formats, organization types, publishers, euros, you can take a look at to see where the content is, one thing that is good, the national oceanic administration content if you try to find a lot of this directly on their website, it's going to be a lot more of a challenge so I would say it is good for specifically that Bureau, but in general, there is so much content from NASA that you might actually have to dig quite a bit to get to everything.

>> You can limit these, if you're looking for an app, it has my -- nice quick links, we have the data listing, and some of them are just a bit broken.

>> We might have NASA Earth observations, you tell it to visit the page and it may or may not be there, another poodle I will get to NASA, -- kudos I will give to NASA, they have good 404 page not found results, they are quite creative with those.

>> You might have the national space radiation, the vertical motion simulator and it will say PDF, API, in this case we have harvested from NASA, this is the type of resource it is, sometimes if you go to click, it may not actually take you anywhere.

>> If you are fine broken links, that is something -- if you're finding broken links, that is something to be aware of.

>> Another good source if you want to find out what is out there, it might be coming from NASA or another agency, science.gov is pretty good. One of the interesting things about this, it pulls from a lot of different databases, which can be good, it can be not so good sometimes.

>> Here we have science.gov, because it is pulling from so many different databases, sometimes you get so much content that it will not be helpful. You'll see down there we have NASA content, Department of Transportation, the PA, there's a lot of different agencies that have content here.

>> We can do a really basic search for NASA or we can do the advanced search. Just a quick search for NASA, we get over 1000 results and this is going to be looking for items that have NASA in the title. This will change sometimes while you are looking at it, you can ignore some of the additional content if you want to or you can have it added.

>> We have a search summary here, these are the 2700 top results found in all sources, we can refine things so we can specifically look at NASA, the study, measurements, we can take a look at climate change.

>> Here we have something, this is coming from PubMed so this will tell you the source, client science is a hoax, this one is coming from the Department of Education, it is a climate data record, you have something on the forest fire emissions, this is coming from TreeSearch .

>> If you find your getting limited in some cases, with regard to the amount of hits that you're getting, this is a way to be able to access all of those databases and get content.

>> Have another Department of Energy here, -- we have another Department of Energy here, as you can see there's a lot of content and it will tell you if you will be able to get this from the PDF and if it searchable.

>> I would recommend this one over data.gov unless you are looking for data sets, if you are looking for articles, and research, this is probably going to be your best source to search as many different resources as possible.

>> This is set up rather nicely. If we go back and look at the advanced search, you will see we have the title, the author, the years and we also have categories. If we want regulations we can do that or we can

also take a number of these out. Or we can tell it we do not want information from a specific source. If we did not want information from tree eight -- from TreeSearch we can do that, if we want more on invasive species, we can manipulate this to a certain extent. I wish they had a category for agency but you have to have your search initiated before it allows you to narrow down in a particular way.

>> If you remember anything about searching some of these outside sources for NASA related content, remember science.gov. It is very helpful.

>> Now we are looking at space. The final frontier. I told you we were going to be coming back to the USGS. One of the things that I have a lot of fun with when preparing for this presentation was looking at how the agencies work with NASA.

>> One of my favorites is this one, the astrology science Center. One thing I had not been expecting was how much different agencies are providing NASA with content. And with software and technology, one great example of this is the USGS and it makes sense, these are the people who are completely trained in taking a look at images and figuring out what those mean as far as typography of the land.

>> They are absolutely great. They have developed the software that NASA uses when it is taking images of planets. That is coming from the USGS and the Astro geology science Center.

>> Here we are at the science Center.

>> We have visiting planets, the mission support labs, maps, research, the maps are so much fun.

>> If you go up we find our product search, the GAZETTEER a planetary nomenclature, all of the names that going to these locations, the geological program, the planetary image locator tool, we also have missions/research, and these have various categories, if we look at one of these, the dunes of Mars, we have announcements, workshops, image galleries, the digital database, and we scroll down, it will go ahead and give us a number of sources. We can have maps, we have attributes, information about the database, the classification of dunes, some of the research is right here for us.

>> We can take a look at the whole solar system, select a particular planet, and it will give us images, this is from the Viking orbiter and a list of resources and there are hundreds of pages of maps of Mars. Which is amazing. I love science fiction you have all the stories about people physically going to planets, to map them, and here we have a lot of that being done without anyone stepping foot on the planet. They can look at the makeup of the planet and you can see what is physically making this particular area, it might be high in iron, but they have developed the software to look at this and be able to figure things out.

>> If you scroll all the way down to the bottom you will find things like map of planet, you can actually get little maps of places on different planets, we have the planetary nomenclature, we have the pilot programs, this helps to makes -- to make this site nice as far as navigation.

>> We have software and items you can download.

>> I was exchanging emails with some of the folks who work here, they are responsive so if you have any questions, go ahead and contact them and they will get back to you.

>> This is what the site looks like. They change it frequently.

>> We deny can -- we did not get into this but this is the PDF, this is good for people are starting to learn about different places in the solar system. You can go to them and they will have this readout like Mercury, this is where it is located, this is the statistic, here are some link to the pilot, and here are various resources, we have maps, all sorts of things. This can be a nice way to get some of those maps, get the content and it's fun, if you look down in this area, you can move around the surface of the planet.

>> This is a close-up of one of the maps. This is a map of Mars. I love all of the colors, they pull out various details.

>> You can also see specific names and there is poor image quality right here.

>> This is the islands in the Baltic Sea, southwestern Finland. This is the program that provides the longest space record of Earth's land in existence. Every day the satellite provides information to help

managers figure out what is going on and make decisions. If you are looking at glaciers, this is one of the reasons they know they are disappearing, they are taking daily images and you can trace how glaciers are changing.

>> They happen to be really pretty. And I am a fan.

>> Citizen science, this is something I find exciting, you can be part of the scientific endeavors. It might be something really simple so if you go to the GLOBE observer you will see something like this, people are tracking when trees are changing colors, when leaves are falling, and their building up a database of the content so they can look for changes and any kind of patterns that might be emerging with this.

>> A really great source of the sciences and exploration directorates. And the crowdsourcing catalog. You can find a lot of this on the NASA website however, the federal crowdsourcing and science catalog is a really fabulous place.

>> This is the GLOBE observer, you can see we have the app you can look at the data and it gives you training on how to use that particular resource. This is something that is great for students, some of them will be for older students or citizens in the public.

>> Some of the sites will be good for younger students as well, they are trying to figure out where mosquitoes are and that is going to be another health-based issue with West Nile virus.

>> This is the sciences and exploration directorates. Here we have the science and crowdsourcing, this is coming from the Goddard space Center, it will give you information about how to get involved, and all the social media and other resources that are available. You can look at things like the universe, etc.

>> This is the best source for looking for any kind of crowdsourcing. We have the asteroid mappers, backyard worlds, the detectives, you can help NASA find new planets, you can help them figure out changes that are going on in your neighborhood, these are great places that you go to be part of science and interact with NASA.

>> You will notice this was a quick NASA search, we got 16 projects from four agencies, these are agencies that are partnering with NASA and you have that multi agency aspect. There is one they have for tracking landslides, that is something USGS wants to know so they can update their maps.

>> There is also the public data archives that you can go to, there are planet hunters, you can help NASA identified on to identify planets and other resources as well.

>> This is something you can get to This is something you can get to@theNASA.gov website, it lists all these other sites, this is the page for planet centers, and this is making maps for the solar system, you can map creators and different aspects in different planets. If you want to look at the images for Mercury, you can tell if there is a mountain.

>> I am finishing off with the universe. This is a detail of a Hubble image of the Milky Way.

>> I have a list of all the databases that I was talking about. You can locate those.

>> They are categorized.

>> We have a little time for questions.

>> We do not have any questions. We will give everybody a few minutes.

>> Have I seen the book, both as our? -- Earth as part?

>> Yes. Students get excited by these images.

>> We covered a lot of material today.

>> Please take a moment to fill out the survey. Thank you for your presentation. We will send out a link for the webinar. What is your background?

>> It's been a long time interest and I am trying to keep up with what are there -- with what they are doing. I did some exhibits that were focused on NASA as well. I used to have a collection that was great, it included stickers and stereoscope's and physical content so it is something I've been around for a while.

>> Thank you everyone for attending. Have a great day.

>> If you have other questions, email me.

>>