Giving Visual Power to Research Stories

Small-Group Activity Report,
URMA — UCDA, Oregon State University, 2014

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Small-Group Activity Report

The group activity at the 2014 URMA conference at Oregon State University was well received by participants. Each of the 16 groups included editors, writers, graphic designers, art directors and other publications/communications professionals. Each group received a brief synopsis of a topic for a feature article scheduled to run in the research magazine of a hypothetical university (see Appendix for all 16 topics). The group was charged with developing a concept that incorporated visual elements in an editorial context.

The Challenge:

Groups discussed their topic, explored possible approaches to a visual presentation of the topic, and sought agreement on a strategy that would give the topic visual power, clarify the science and intrigue readers. Facilitators were asked to report back on what difficulties appeared in the collaboration and how the problems were addressed (see facilitators' comments below). Groups could consider any or all of the following elements:

- Opening spread
- Typography, including headline treatment
- Photography
- Illustration
- Infographics
- Charts/graphs
- Sidebars

Here are some of the participants' comments from the Conference Feedback Form:

- "I really liked the exercise of planning a story with the designers."
- "I enjoyed mixing it up with the designer's group. At future conferences, I'd like more interaction like that."
- "Collaboration exercise was great."
- "I gained a better understanding of the collaboration between writers, designers, photographers and web developers. I think they will help me think more visually."
- "It was great to have photographers and designers integrated into the agenda and attending the conference."
- "The collaboration breakout exercise was the highlight of the conference for me. It was interesting to hear the varied design/art ideas and their perspective on the process."
- "The highlight of the conference for me was the partnership discussion on editorial and design. This has been so hard for us, so I loved the ideas."
- "I really valued the small-group exercise. It showed me a new way of working with the whole team."
- "For future conferences, I'd like to have at least one more group exercise—at least once a day!"

Below are individual responses of facilitators who reported back, in their own words:

Question 1: What were the biggest sticking points for your group as they worked through the assignment?

- "Honesty. As long as we tell the story fearlessly and present all perspectives honestly, thoroughly and respectfully, we don't have to worry about how it will be received by the stakeholders or audience in general. Participants agreed that the story must be told this way without editorial interference from university administration. If it is presented as a one-sided or spun as university PR, then it will come across as insincere and possibly insensitive." (Group 16, Matt McGowan)
- "The designers in the group immediately started thinking of design possibilities while the editors/writers jumped into story ideas. After a few minutes of tossing out ideas we all realized that we really didn't know what the story was. There was not enough information in the Topic to know whether the graphics and illustrations should represent a positive outlook or a pessimistic one. The Topic described a new data set for healthcare but it didn't say whether the children of immigrants were healthier than their non-immigrant peers or whether they were getting the care they

needed. Should we run a photo of a smiling child who is healthier thanks to new health-care access programs, or a sad and sick child whose parents cannot afford health care? We also discussed the fact that given that this was a story about large data sets, would it be right to portray photos of individual children?" (Group 12, Catherine Zandonella, Princeton)

- "I'd say consensus was the biggest sticking point. Everyone had many ideas and was happy to be included in the discussion, but ultimately, I think each of us was waiting for 'someone' to make the final decision on the direction." (Group 1, Martha Terry, Binghamton)
- "Not sure there were any. The group worked well together. The only issue was that one woman didn't really have any magazine experience, but she caught on to the exercise quickly and offered some good contributions." (Group 15, Sue DiBella, Nevada)
- "We struggled with content. Since there are no research findings to present, we chose to focus on the nature of the problem and the potential for solutions. We agreed that we didn't want to emphasize stereotypical risky behaviors with images of tattooed youth smoking and drinking and that we wanted to make this a positive presentation. The primary focus should be on hope for youth who experience depression, loneliness or threats of gang violence. The designers emphasized that they did not want to be told how to implement an idea. One person said, "Designers like problems, not solutions." She suggested that designers be included in story concepts at the earliest possible stage, even if details are still emerging." (Group 13, Nick Houtman, Oregon State)
- "The group felt there were several unanswered questions, such as who's the audience and what's the goal of the article (for example, is it meant to introduce the Center? Look for funding? Recruit scientists?)." (Group 10, Laura Perry, UCLA)
- "One challenge was that most of our group didn't have a strong science background and we didn't feel we had enough information from the story description to really know what we were showing. We all really wanted to be able to talk to the researchers more and get a better sense of what to show. We tended to agree on most things but one area of disagreement was how much attention to give the funding agency. Some group members wanted a sidebar about the agency that funded the research while others just wanted to mention them within the main story." (Group 3, Diane Boudreau, Arizona)
- "There were no sticking points. Several people jumped right in with both conceptual and literal options for visuals, some of which we were able to merge together." (Group 6, Teresa Hall, Oregon State)

Question 2: Were there shifts in perspective as the discussion went along? Give examples. How were those shifts achieved?

- "Not much shifting this way. Participants unanimously agreed that we should not capitulate to potential pressure from administration to tell the story in an incomplete manner, that is, to not present the perspectives of all stakeholders (scientists, families suffering from diseases that research could address, animal rights activists). I guess it's fair and accurate – as well as proof of my general cynicism – to say that I was prepared to compromise, to tell only the researchers' side of the story, and to be unapologetic about the interests of the animal rights' activists, but the others, who were all designers or marketers, insisted that we show all perspectives, including thoughtful sidebars and perhaps sympathetic photographs about even the loudest and most unreasonable protesters. So I shifted, but it did not take much convincing." (Group 16, Matt McGowan)
- "We had a lot of discussion about how the story should be presented, including questions of whether the story should be about the scientist or about the findings only. We started out very much in our domains of knowledge but we soon realized we needed to work together. The designers wouldn't know what sorts of graphics and photos to seek out unless the editors/writers did some additional interviewing and/or read the scientific paper that

accompanied the data." (Group 12, Catherine Zandonella, Princeton)

- "As the discussion went along, some perspectives shifted. The photographer in the group originally suggested a photo spread, but as other ideas were suggested, he was leaning toward a longer piece. We had a multimedia artist in our group that came up with great ideas for a more interactive piece for iPads or mobile devices." (Group 1, Martha Terry, Binghamton)
- "I read the story description aloud to make sure everyone was completely grasping the nature of the story, and then we discussed it. Fortunately for us, Kathryn Jepson was in our group, and she had some background on a real-life similar story. She explained it well, so the group began to grasp the complexity of the subject better." (Group 15, Sue DiBella, Nevada)
- "In general, we talked as much about process as about a design for this story. Because there are no research findings in this scenario, we discussed possible approaches to the topic and to the research team. We agreed on a general tone for the story and identified potential elements, such as examples of people whose lives could be affected by the research, profiles of the researchers and infographics that show national statistics on risky behavior. While we brought different perspectives to the topic, there was no disagreement or change in attitudes among the participants." (Group 13, Nick Houtman, Oregon State)
- "Not really. There were a couple of graphics people who had design ideas but no ideas that people really felt didn't work. We did agree on a direction – what is the current status, what is the Center going to do, what could a new world look like?" (Group 10, Laura Perry, UCLA)
- "I don't think we had any major shifts. We all pretty much agreed that with such esoteric information (DNA samples from undersea bacteria) we should use our visuals to evoke a sense of place (perhaps an illustration of the sea floor), show how the research was done (how do you get samples from the ocean floor?) and provide more of a sense of perspective (perhaps where these bacteria fit on the tree of life and how much of Earth's life is microscopic) than to just represent the DNA that was discovered." (Group 3, Diane Boudreau, Arizona)
- "The group shifted in how they thought regarding the story. Everyone's initial thought was to focus on the actual 'thing' of the story, and then shifted to the people — their story and emotions. The consensus was that it was a stronger story. A sub-story (and visual) was a timeline." (Group 6, Teresa Hall, Oregon State)

Question 3: What were the most workable group strategies for reaching consensus?

- "The designers enthusiastically embraced the idea of art that, again, fairly and objectively illustrated all sides of the controversy. One idea included photographs of two people – perhaps scientist and activist – situated opposite each other on the page and participating in dialogue or a conversation about the topic. This would be illustrated with thought bubbles or dialogue boxes. They also supported a strong opening spread that featured the faces of all major stakeholders." (Group 16, Matt McGowan)
- "We found that workable group strategies involved communicating about our needs, and admitting when we didn't know the answers. There were clearly different ways of thinking about how to portray this story, which was about data. The designers had lots of ideas about how to portray the data without using charts or bar graphs. The comment was made, 'Personally I wouldn't want to read a story about a bunch of data sets.' We also talked about process: each office works a little differently in terms of how they involved the designer. Most approaches involved brainstorming meetings with the editor, art director and designer. However it was also suggested that the designer or photographer meet with the scientist to get an idea of the story. We discussed the idea that the designer presents three concepts, a safe option, one that is beyond that nice balance of creative and conservative, and the 'out there' option." (Group 12, Catherine Zandonella, Princeton)
- "Open discussion was the most workable strategy. Each group member was polite. I do think that because we didn't know each other, there were no barriers (personal or otherwise) to get the group

stuck or contentious." (Group 1, Martha Terry, Binghamton)

- "I asked each person to offer some iconic imagery to represent the story. Each came up with some very creative ideas to represent the story, which involved astronomy research. Putting each member of the group on the spot actually worked well! Then I asked each one to do a rough sketch of any opening spread using their ideas. Even if they weren't graphic artists, they all came up with great ideas, and we discussed the pros and cons of each one." (Group 15, Sue DiBella, Nevada)
- "We discussed uses of light as a design approach. While problem behaviors could be shown in monotone or black and white, solutions could emerge in a more colorful way. Light could be used to emphasize youth vulnerability and attitude as well as hope. One suggested design approach uses the metaphor of traveling along a road to show movement from risk to healthy behavior. Design elements in the background could show solutions to risky behavior as destinations. We discussed the importance of connecting with the audience for the story. That could be achieved by seeking examples of people whose lives demonstrate the risk of harmful behaviors and the benefits of addressing them. A profile of a youth's journey could provide a compelling window on the nature of the problem and what it takes to address it. We agreed that the story needs a personal focus and should not be about a program." (Group 13, Nick Houtman, Oregon State)
- "Pretty much we all presented ideas and then debated their merits before reaching consensus. Often a disagreement about one idea would lead to an alternate idea that generated more agreement. I feel confident in saying that brainstorming as a group produced more ideas than any of us would have come up with on our own—certainly more than I would have." (Group 3, Diane Boudreau, Arizona)

Question 4: Did everyone get onboard with the final solution, or was there dissent?

- "Pretty strong consensus. One team member thought the design plans should be a little more concrete. But she agreed overall with the spirit and execution for the design." (Group 16, Matt McGowan)
- "Our final solution was that we didn't have enough information to start planning the visuals. We needed the writer or editor to do additional work to find out what the story was about, and then to convey that information to the designer. However, one of our designers warned that we should not wait too long to start working with the designer -- sometimes this can cause last minute, shoddy work. One idea we came up with was to have an up-close picture of an immigrant child with statistics placed around the edges of the photo. To make it work, the writers and designers have to be in agreement. The graphic has to mean something, it is not mere decorating." (Group 12, Catherine Zandonella, Princeton)
- "We had a very lively discussion and many ideas were presented, but we did not have a consensus on a final solution." (Group 1, Martha Terry, Binghamton)
- "We didn't really settle on which one was the best, so there was really no reason for dissent. I brought up some practical considerations that only editors think of, and this may have been as close to dissent as we got. For example, when one of the group suggested using an opening visual that focused on the "data" nature of the story, I said this: 'There are so many stories that have data as their only imagery, so I might want to save your approach for those types of stories. For this one, we have these fantastic Hubble images that are absolutely beautiful, so I might want to use one of those, and save the data image for later.' They all seemed to see the point I was making, so it was a good discussion." (Group 15, Sue DiBella, Nevada)
- "We all agreed with the final layout." (Group 3, Diane Boudreau, Arizona)
- "We did not come to a final layout. We focused more on the actual process and how creative we could be." (Group 6, Teresa Hall, Oregon State)

Question 5: What are your biggest takeaways? What did you learn that's valuable?

- "More discussion is better, even at the conceptual or theoretical level, to achieve a product that everyone likes. Allow participants to talk about their

opinions, perspectives and taste. But ultimately, writers probably should defer to the experts who know how to tell the story visually, just as designers would not suggest changes to language or text." (Group 16, Matt McGowan)

- "Our biggest take-away was that it can be easy for a designer to misunderstand a story in the rush to give some concepts to the editor. It is important for the editor to understand the story before bringing in the designer. If that is not possible, then it is probably best to go with some neutral images but they will be less powerful." (Group 12, Catherine Zandonella, Princeton)
- "The biggest takeaway was that every individual was happy to be included in the decision making from the beginning of the process. One of the participants mentioned that he was happy that there were no 'preconceived solutions' and that all suggestions were taken into consideration. It was a great 'brainstorming' exercise." (Group 1, Martha Terry, Binghamton)
- "A few things come to mind: If you give people who are not artists the chance to sketch something out, they come up with great ideas! Even though they can't actually execute the idea, they have some really good, creative input. Also, I realized that putting people on the spot was actually helpful, as was the quick format—it forced people to just go with some idea, no time to agonize over whether it would be perfect. Finally, the biggest takeaway was that there should be an exercise of some kind at each URMA conference—it livened up the exchange, energized the discussion, and forced people to get out of passive mode. It was one of the best parts of the sessions." (Group 15, Sue DiBella, Nevada)
- "Our takeaways were: (1) Early production discussions should focus on design problems and possible solutions rather than a single concept; (2) Designers, photographers and illustrators need general guidance about tone and content but want the freedom to explore ideas and contribute new perspectives; (3) Visuals can surprise readers, that is, show them the unexpected; (4) Designers want context for structure and content, for example, number of pages, position in the magazine's flow, headline and primary story message; (5) Infographics, photos and design elements give readers important windows into the story." (Group 13, Nick Houtman, Oregon State)
- "Having adequate information is key to making decisions about art/layout/format. Group brainstorming is a great way to generate lots of ideas. However, in the end, if we were to make this story real we would have needed a leader who could make final decisions about what the story would look like. "(Group 3, Diane Boudreau, Arizona)
- "Our biggest takeaway was the idea that having a few graphic suggestions before the writer started his or her interview might lead to different questions for the researcher. For example, we talked about using a family of five and how they are currently using energy sources and how they might be using energy sources in the future. The researchers might be able to help us illustrate that idea or provide a different suggestion of how to visually tell the story." (Group 10, Laura Perry, UCLA)
- "We wanted to be included in all aspects of the story, not wait until the visuals were needed. At one point the group shifted from looking at what kind of visuals we would use to a discussion of how the story could be written. The group came up with a very unique way of writing the story to illustrate the conflict. We were all amazed at how having a say in all aspects of the story created a harmony among all the participants." (Group 6, Teresa Hall, Oregon State)

Appendix

Small-Group Activity Topics

Group 1
Facilitator: Martha Terry, Binghamton

Topic: How the musician's body relates to his or her musical performance
"The material of music is sound and bodily movement" –Aristides Quintilianus, c. 300 A.D

In 2007, Toyota unveiled a new robot, a humanoid violin player that performed a technically accurate rendition from Elgar's ***Land of Hope and Glory.*** But is a robot really a musician? Most observers agree that technical accuracy is only one aspect of musical performance. Social scientists at Urban University have discovered that musicians' body movements are closely tied to their level of familiarity with the composition and progressive skill in performing the piece. The scientists have also found that elite performers perceive their instruments as "natural extensions" of themselves, something the researchers call "embodied interaction" or "embodied music cognition." The findings have implications for music education, interactive multimedia platforms, music gaming, and rehabilitation.

Group 2
Facilitator: Joe Kays

Topic: How cursive writing boosts cognitive skills (reading, memory, learning)
Many school districts are dropping instruction in cursive writing. After all, everybody keyboards now. But there could be a serious downside. Learning cursive is an important tool for cognitive development, a researcher at Upstate University has found. "Learning how to write in cursive activates the brain in a unique way, leading to stronger learning and processing skills than typing or printing," says the lead researcher. Brain imaging shows that learning cursive activates more brain areas. Also, when kids practice writing letters in general, not only are the "writing" parts of the brain functioning, but also the "reading" locations of the brain. "One could view the brain as a muscle," the researcher says. The more you "work out" certain parts of your brain, the more effective your brain becomes at those specific functions. For kids, earlier stimulation and activation of more areas of the brain improves memory, learning, and self-expression.

Group 3
Facilitator: Diana Boudreau, Arizona

Topic: Seafloor microbes living at hydrothermal vents: What's down there, anyway?
In a study of microbes (bacteria, archaea, protists) living in and around deep-sea hydrothermal vents (where super-heated water seeps into the ocean from fissures in the seafloor), researchers at Tech State University found more than a billion readable DNA sequences in a single sample. "It means there are probably several million genes in the sample," the lead researcher says. "Several million genes probably represent several thousand species of microbes." Numbers of this magnitude edge into 'big data' territory, he notes. He explains that certain DNA sequences are found only in certain groups of microbes (for example, only certain kinds of bacteria have the genes needed to generate methane). Your challenge is to show this important finding visually—tricky not the least because the data come from DNA/RNA analysis (not from looking at whole cells). The scientist has provided a detailed taxonomic tree full of unpronounceable scientific names.

Group 4
Facilitator: Rachel Coker, Binghamton

Topic: Designing spaces for doing science
"Scientists are eager to let architects shape a new kind of work environment for them. It seems a safe bet that the arrangement of a space helps shape the activities that take place in it." Paul Goldberger, The New Yorker, 2011

Downtown University has built a glitzy, LEED-certified building designed specifically to meet the needs of researchers in the life sciences (biochemistry, microbiology, cancer research, nutrition sciences). The building is beautiful to look at, and the University Marketing Department has done a press release highlighting the

1-percent-for-the-arts installations, along with the "green" construction and energy-efficiency aspects of the LEED building. But you want to tell a different story, one that gives readers insight into how the building was created to give scientists not only an elegant place to work, but a practical, efficient, useful place to conduct research. How does the building itself aid research?

Group 5
Facilitator: Melissa Beattie-Moss, Penn State

Topic: From breeding peas to altering genes — Are there risks in messing with plant genetics?
A firestorm erupted when a farmer found GMO wheat growing in a fallow field in the state of Pacifica. Around the campus at Pacifica State University, sidewalks were scrawled with "*GMO causes cancer*" and "*Monsanto kills*." Yet humans have been manipulating food production ever since Gregor Mendel discovered the secrets of selective breeding. How does GMO differ from selective breeding? Why do Japan and Europe ban GMOs in their food supplies? Is there any evidence that genetic modification is dangerous to human health? What does the latest science tell us about the safety of GMOs?

Group 6
Facilitator: Teresa Hall, Oregon State

Topic: Forging unexpected alliances in the Big River Basin
A geosciences professor with the Institute for Water and Watersheds at Western Region University recently helped guide a break-through process in the volatile and seemingly intractable Big River Basin water dispute over dams, irrigation and tribal fishing rights. The process resulted in an historic agreement that no one imagined was possible. The Big River Basin Restoration Agreement emerged from a unique collaboration that broke through the anger, frustration and suspicion that had hampered cooperation among tribal and nontribal groups, literally for decades. When the 28 stakeholder groups signed the agreement, they paved the way for the "largest dam removal in the history of the world," in the researcher's words. Her "social geography" study describes "shifting senses of community and place," with poignant anecdotes that illustrate the human emotions and ecological stakes.

Group 7
Facilitator: Amy Charron, Oregon State

Topic: How eating cabbage and broccoli may prevent tumors by turning genes on and off
One way in which diet may help prevent cancer is through its impact on gene expression — that is, how does your genetic makeup actually play out over your lifetime? Does eating a lot of cabbage, broccoli and other "cruciferous" vegetables (which contain a compound called "sulforaphane") influence which of your genes are turned "on" or "off"? The growing field of "epigenetics" — the study of compounds that can attach themselves to your DNA and affect how those genes are expressed in your body — is revolutionizing the way we study cancer, says a researcher at Linus Pauling University. "*Epigenetics is saying that you may have the gene for a given kind of cancer, but whether you actually develop the disease depends more on these other chemicals that may get stuck to the gene, not the presence of the gene itself," says the lead scientist in the lab. "Those chemicals can come from what we eat as well as from other sources, such as environmental toxins."* It may help scientists understand why one woman with a genetic predisposition to, say, ovarian cancer never develops the disease, while another woman with the same genetic risk gets sick. It may also provide new approaches to treatment and prevention, either through drugs or diet. Plus, the impact of the discoveries could be relevant to other disease processes as well, ranging from cardiovascular disease to epilepsy and bipolar disorder.

Group 8
Facilitator: Natasha Martineau, Imperial College

Topic: "Diabesity" — American kids are getting fatter and sicker
Researchers at Land Grant University have linked America's epidemic of obesity with sharply rising levels of type-2 diabetes, particularly in children. They have identified the main culprits as poor nutrition, sedentary home life, and dwindling PE classes in daycares and public schools. The long-term health risks for these kids are devastating, not only to the individuals and their families, but to their future employers and an

increasingly overburdened health-care system. [Your challenge: How can this story be told visually without showing fat kids and piles of junk food?]

Group 9
Facilitator: Dave Pacchioli, Penn State

Topic: The end of penicillin: On the cusp of a world without antibiotics
An evolutionary biologist studying infectious disease argues for new, sustainable approaches to treating malaria, cholera, TB and other deadly diseases to safeguard future generations. As pathogens quickly evolve to resist antibiotics, public health strategies must be grounded in evolutionary theory, balancing current clinical care against long-term societal implications of a "post-antibiotic age," the lead researcher argues in a new paper in the journal *Infectious Disease*. "Superbugs are on the rise, and incurable hospital infections are becoming frighteningly normal," she says. [Your challenge: to illustrate this topic engagingly, yet without sensationalizing it.]

Group 10
Facilitator: Laura Perry, UCLA

Topic: Beyond EverReady: The quest for a green battery
Batteries drive nearly all of our portable electric devices, and are critical in hybrid electric and all-electric vehicles. They promise to store solar and wind power for use when the sky is cloudy or the air is still. They could power an economy that is greener, more sustainable, and less dependent on imported oil. These promising technologies, however, rely on batteries that are very different from your basic EverReady. They may involve new chemistries, new materials, new structures, and complicated control systems. A new research center for battery energy and storage at Northern State University is gathering a brain trust of researchers with expertise in all these areas to push the technology forward.

Group 11
Facilitator: Marcia Goodrich, Michigan Tech

Topic: Microbe-powered factories — The quest to convert electricity into methane fuel
Microbes that convert electricity into methane gas could become an important source of renewable energy. Researchers are raising colonies of microorganisms ("methanogens") with the remarkable ability to turn electrical energy into pure methane, the key ingredient in natural gas. The goal is to create large microbial factories to transform clean electricity from solar, wind or nuclear power into renewable methane fuel and other valuable chemical compounds for industry. But there are significant hurdles to overcome before electricity-to-methane technology can be deployed at a large scale. That's because the underlying science of how these organisms convert electrons into chemical energy is poorly understood. Researchers at East Coast University are delving into the science.

Group 12
Facilitator: Catherine Zandonella, Princeton

Topic: Healthy immigrant children — Metadata for little kids
Social scientists at Border University are taking a sweeping look at health outcomes and heath-care access among the children of Mexican immigrants. The initiative is slicing and dicing data amassed from national longitudinal studies conducted over the last decade. The project's challenge is to identify information in the data sets that can be used creatively to address important unanswered questions about the health and health-related behaviors of these children. "We are still early in the project, but we hope to contribute to new ways of looking at important questions," says the researcher.

Group 13
Facilitator: Nick Houtman, Oregon State

Topic: Adolescents at risk — Prevention science targets teens
Psychologists, extension specialists and health researchers at Rust Belt University are cutting across disciplines on behalf of kids and families. Researchers in three colleges — Health and Human Development, Ag Sciences, and Liberal Arts — have formed a consortium on "prevention science." Together, they will conduct research and design programs aimed at steering kids away from harmful behaviors (underage drinking, risky sexual behavior, bullying, depression, suicide). The research will underpin programs that can change

behavior and improve health and wellbeing. [Your challenge: How to illustrate this without using hackneyed solutions such as B&W pix of moody teens in shadow.]

Group 14
Facilitator: Andrea Gibson, Ohio

Topic: Marrow and metastasis — Cells in overdrive
When breast cancer spreads, the disease typically invades the long bones of the body, such as the femur and tibia. Inside these long bones, giant marrow cells known as megakaryocytes ("MKs") go into overdrive in the presence of cancer and may contribute to destructive bone loss and embolisms. In a healthy person, MKs are responsible for producing the platelets needed for normal blood clotting, but in the course of certain diseases, including metastatic cancer, their number increases three- to five-fold. A researcher at Far West University is studying how these specialized bone marrow cells affect the spread of cancer cells. "It's important that we learn more about bone metastasis and how to slow it down," he says.

Group 15
Facilitator: Sue DiBella, Nevada

Topic: Mapping the cosmos — discovering the "unknown unknowns" in the universe
Across the globe, instruments that detect light from across the electromagnetic spectrum (gamma-rays, x-rays, infrared, radio-astronomy cosmic rays, neutrinos, gravitational waves) are being networked under the leadership of Cosmos University. Dubbed AMON (Astrophysical Multi-messenger Observatory Network), its mission is to collectively search for previously unseen astrophysical signals by linking "triggering" telescopes in order to collect data from broad swatches of sky and quickly share it. The hope is that a rapid response with narrow-field "follow-up" telescopes can map the event in time and space.

Group 16
Facilitator: Matt McGowan, Arkansas

Of white rats and beagles: The ethics of using animals in research
The animal rights group, Animals Are People Too, has targeted Bio-Tech University for its use of animals in cancer research. A noisy bunch of protestors has been marching and chanting outside the Research Office. Local news station KTVX and newspaper *The Bugle-Gazette* have been covering the story, accompanied by photos of rats with large tumors (photos not actually taken at the university). In response, the university's news team has been releasing press advisories to correct misinformation and provide quotes from researchers about the value of using animal models. For its next issue, your research magazine plans a cover story about the use of animals at your institution. How would you approach this sensitive and controversial topic?