



IHMC Board of Directors Teleconference Meeting

Monday, December 8, 2014

8:30 a.m. CST Meeting; 9:30 EST Meeting

Roll Call

Chair Ron Ewers

Chair's Greetings

Chair Ron Ewers

Action Items

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| 1. | Approval of September 15, 2014 Minutes | Chair Ron Ewers |
| 2. | Introduction of New Board Member Mort O'Sullivan | Chair Ron Ewers |
| 3. | External Audit and 990's | Director Dick Baker |
| 4. | Pensacola Expansion | Chair Ron Ewers |

Chief Executive Officer's Report

- | | | |
|----|----------------------------|-----------------|
| 1. | Research Update | Dr. Ken Ford |
| 2. | Federal Legislative Update | Dr. Ken Ford |
| 3. | Ocala Update | Dr. Row Rogacki |

Other Items

Adjournment

IHMC Board of Directors Teleconference Meeting Minutes
Monday September 15, 2014
8:30 a.m. CST Meeting; 9:30 a.m. EST

Roll Call
Chair's Greetings

Chair Ron Ewers
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Action Items

1. Approval of June 23, 2014 Minutes

Chair Ron Ewers

Chief Executive Officer's Report

1. Discussion of Pensacola Flooding and Expansion
2. Discussion of Ground Floor Renovation in Ocala Bldg
3. Update on IHMC Foundation
4. Federal Legislative Update
5. Research Update

Dr. Ken Ford
Dr. Ken Ford
Dr. Ken Ford
Dr. Ken Ford
Dr. Ken Ford

Adjournment

IHMC Chair Ron Ewers called the meeting to order at 9:30 A.M. EST. Directors in attendance included: Carol Carlan, Bill Dalton, Ron Ewers, Eugene Franklin, Chris Hart, Hal Hudson, Jon Mills, Alain Rappaport, Jim Reeves, and Ray Russenberger. Also in attendance were Ken Ford, Sharon Heise, Row Rogacki, Phil Turner, Ann Spang, Alan Ordway, and Julie Sheppard.

IHMC Chair Ron Ewers welcomed everyone who was present in both Ocala and Pensacola and those that dialed in. He mentioned that the next board teleconference meeting was scheduled for December 8th and the next in person meeting would be February 8th and 9th, 2015 and asked all board members to note these dates on their calendar. With those comments, he moved into the meeting and introduced Action Item 1 being the discussion and approval of the September 23, 2014 minutes. A motion was made by Jim Reeves and seconded by Hal Hudson to approve the September 2014 minutes and the motion carried unanimously.

Chair Ewers informed the Board that IHMC was hoping to have begun the Ocala ground floor renovations by the December meeting, and that he was looking forward to updating everyone on the designs for the renovation of the Ocala ground floor to new office space. He added that the landscaping has been completed and the building exterior looks very nice and hopefully many will be able to see this on the next Ocala visit. With those remarks, he asked Dr. Ford to provide his report.

Dr. Ford thanked Chair Ewers and remarked that it has been an interesting summer. He began by discussing the IHMC fiscal year external audit and informing the Board that this appears to be progressing smoothly remarking that the auditors from Saltmarsh have left the field and are in the process of wrapping up the audit. He mentioned that IHMC

expects to have a draft by late September and at this time, we are unaware of any findings or adverse auditor comments. Dr. Ford continued by mentioning that IHMC is still awaiting closure on the final audits of the Indirect Cost Rate for the fiscal years that ended June 30, 2008 through 2011 conducted by DCAA on behalf of ONR. He added that the DCAA is scheduled to begin their review of the fiscal years ending June 30, 2012 and 2013 shortly and that we hope to finalize these audits soon. He asked Julie Sheppard to comment on this and Julie mentioned that there was one issue that was unresolved with DCAA and that this involved the way that IHMC booked the state appropriation but that we were working diligently with the Office of Naval Research on this issue.

Dr. Ford then turned to an update of the IHMC facilities and began with Pensacola. He discussed with the Board what he hoped was the tail end of recovery from the April flood in which several of our research and administration facilities in Pensacola were sufficiently damaged. He began with a brief update of 40 S. Alcaniz (Building 1) mentioning that the main building suffered substantial flood damage to flooring, walls, mechanical equipment, contents, and vehicles and that repairs to this building are almost complete with most employees having moved back into their first floor offices. He added that mechanical equipment is functioning but was submerged and is to be replaced and improved pending FEMA recommendations and approval. Dr. Ford mentioned that IHMC has also enhanced some damaged finishes and materials and is currently compiling a list of damaged equipment and contents to be submitted to the insurance adjuster and FEMA for consideration.

He continued his discussion turning to 40 S. Alcaniz (Building 2) the IHMC Machine Shop adding that this building received only minor flooding but did not suffer substantial damage to the structure and while we did lose a generator, a FEMA claim has been submitted. Continuing on to discuss 40 S. Alcaniz (Quonset Hut), Dr. Ford mentioned that this building received major flood damage and had been used to store outdated equipment and materials in an unconditioned storage space. He added that a list of the damaged items has been submitted to the insurance adjuster and FEMA and the resulting building structure suffered damage and has subsequently been vacated and demolished.

Dr. Ford then turned to the rental properties beginning with 100 S. Alcaniz (Suite A) mentioning that IHMC has since moved back into this space as of August 1st adding that this is a leased space that sustained minor flooding, but required repair. He commented that the furniture and contents were removed, stored, cleaned and reinstalled after the landlord completed cleanup, drying, and repair to the facility and the building was tested clear for mold. He continued by mentioning that 100 S. Alcaniz (Suite B) is also a leased space that did not get receive flooding or any reported damage and which houses IHMC robotics equipment.

Dr. Ford continued with his update mentioning 127 S. Alcaniz — adding that repairs are now completed and that the administrative employees moved back into this space as of August 15th. He commented that this leased building sustained substantial water damage to furniture, files, and some equipment and that the contents were removed, stored, some items cleaned and/or repaired and reinstalled after the landlord completed the cleanup,

drying, and repairs to the building. He concluded by mentioning that this building was also cleared of mold prior to re-occupancy. Dr. Ford finished his Pensacola facilities discussion with Wright St. Robotics Lab adding that this facility was undamaged.

Dr. Ford then turned his discussion to IHMC's expansion in Pensacola, remarking that currently, IHMC is still on hold and that there is not much more to add here. He remarked that he would have hoped that by now the City would have made a public commitment to improving the drainage situation downtown adding that the downtown should not continue to serve as Pensacola's storm water retention pond and because of that, IHMC is on hold and exploring other options.

Dr. Ford then turned his comments to Ocala and a discussion of the facility issues that revolve around two projects, the first being waterproofing and drainage issues while the second involves a major renovation of the ground floor. Dr. Ford began by informing the Board that the waterproofing and site drainage project is almost complete with only a few general contractor punch list items, and final review by the City of Ocala pending. He added that the new landscaping and irrigation system have been installed and that thus far, this seems to have been a quite successful project and only time will tell. He continued on to discuss the envisioned renovation of the ground floor, adding that IHMC is currently testing radon levels and exploring feasible countermeasures and that while some of the levels are technically acceptable at this point, we would like to see some further improvement before beginning construction on the Ocala expansion. With regard to the renovation, Dr. Ford stated that the 95% design documents are underway and are due back next week and that upon approval, the architect and engineer will prepare final drawings for pricing. He mentioned that construction is scheduled to start hopefully in November and be completed May 2015 with an estimated cost of \$570,000. He added that once complete, the project will include the addition of approximately 6,500 square feet that includes six private offices, open collaboration/meeting spaces, Smart Home Laboratory, exercise room with locker area, an additional unisex restroom, a copy room, several storage areas, and new lighting and mechanical systems.

Dr. Ford then turned to his research update informing the Board that since the most recent board meeting in late June, IHMC has received over \$4.2M in new funding, and also has approximately \$3.2M of additional approved new research funding in the negotiation process. He proceeded to tell the Board that lingering sequestration has continued to drive difficult federal budget decisions as we head into fiscal year 2015, and cuts to research are feared. He added that research is our country's intellectual seed-corn and pundits now worry about an innovation deficit, or widening gap between the actual level of federal government funding for research and what the investment needs to be if the United States is to remain the world's innovation leader. While the next federal budget is still subject to negotiation, Dr. Ford explained that we are beginning to get a picture of what the FY15 federal funding climate will be like and that it is looking like the majority of IHMC customers, including the Department of Defense, NASA and the National Science Foundation, will all be facing reduced basic science and technology budgets for FY15. Still, he added, IHMC has created solid relationships with national funding agencies and private sector sources and he anticipates continued success in FY 2015 and that as we

look back since our last board meeting, IHMC has received or is shortly expecting \$7.4M in federal funding alone.

Dr. Ford continued on to discuss a project that he had as “pending award” at our last meeting indicating that he is pleased to announce that Dr. James Allen and a substantial team of IHMC researchers have recently kicked off a \$3M project sponsored by DARPA in the area of Big Mechanisms. He explained that Big Mechanisms are large, explanatory models of complicated systems in which interactions have important cause-and-effect consequences, and while these are currently manually created, the extent to which the construction of such big mechanisms can be automated could change how science (and much else) is done.

During this effort, Dr. Ford informed the Board that James and his team will be developing natural language technology to read research abstracts and papers to extract pieces of causal mechanisms, assemble these pieces into more complete causal models, and reason over these models to produce explanations. He explained the experimental domain of the program is cancer biology with an emphasis on building models of signaling pathways, and once again we are glad to have the opportunity to partner with our colleagues at the Moffitt Cancer Center.

Dr. Ford then commented that it was recently announced that IHMC would be part of a winning team led by L-3 National Security Solutions to provide quick reaction technical support for prototyping activities, proof of concept initiatives, capability gap solutions, and studies. He stated that IHMC’s role is to provide communications and networking research in the area of Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance and Reconnaissance (C5ISR) for the customer and its mission partner organizations. He added that Dr. Sharon Heise will lead the effort, with a number of IHMC researchers slated to participate.

Speaking of another new project, Dr. Ford discussed that in collaboration with a small business partner Chi Systems. Dr. Robert Hoffman has received funding from NASA to develop a human-robot interface that will enable crew and ground controllers to better operate, monitor and supervise robots in space. He added that Robert will be participating in all aspects of this project based on IHMC’s extensive expertise in cognitive engineering and the methodology of coactive design for human-robot teamwork.

Under continuing support from the Office of Naval Research, Dr. Ford informed the Board that Dr. Niranjana Suri has been funded to prepare for and participate in the Marine Corps’ fourth Agile Bloodhound exercise at the Marine Corps Forces Pacific Experiment Center in Hawaii this autumn. He stated that the goal of the Agile Bloodhound program is to provide Marines with the capability to use mobile devices to gain tactical information from enterprise and intelligence sources adding that Niranjana and his team will be bringing their agile computing research to the exercise, providing mobile distributed systems that are opportunistic in discovering and using available computational resources, for example the CPU on a passing Humvee.

Dr. Ford then commented that IHMC's newest award is the result of a collaborative partnership with New York University in which Dr. Peter Neuhaus will pursue powered exoskeleton research through the National Science Foundation as part of the National Robotics Initiative. He indicated that while NYU will focus on computational evaluation and optimization of the human-exoskeleton physical interactions when man and machine work together, Peter will focus on system design, fabrication and human testing of customized lower extremity exoskeleton prototypes.

Regarding the several pending awards, Dr. Ford mentioned one of particular interest includes Dr. Bonnie Dorr starting an exciting new association when she takes on a part time IPA position for temporary federal employment with the National Institute of Standards and Technology (NIST), which has a mission to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. He stated that Bonnie will serve as a senior technical staff member for the NIST Data Science program, where she will participate in activities such as leading working groups and initiating diverse research tracks for inclusion in future NIST R&D investments. He explained that NIST stands to greatly benefit from Bonnie's expertise in computational linguistics, and IHMC colleagues are looking forward to learning from Bonnie's new federal experience.

Dr. Ford then turned the discussion to recruiting remarking that as many Board members know, one of his favorite activities is recruiting new researchers to the IHMC team. He explained that Bonnie Dorr has hit the ground running when it comes to helping recruit new researchers and staff to our Ocala location and that IHMC is close to making offers to several candidates who have been interviewing with us throughout the summer and into the fall. He explained that this is a team undertaking and that IHMC brings in the candidates for several days providing opportunities for them to interact with as many people at IHMC as possible, give an afternoon talk on their research, and explore the community. Where possible, he added, IHMC tries to have each candidate visit both Ocala and Pensacola and at the December meeting, he hopes to talk more about the new IHMC-Ocala team members. Dr. Ford continued on to state that although much of our growth emphasis has been in Ocala, and the flooding issue looms large in Pensacola, we are continuing to carefully recruit new researchers for our Pensacola headquarters and that he hopes to have some exciting news on this front at the next meeting as well.

Dr. Ford commented that he was very pleased to announce that Dr. Dominic D'Agostino has agreed to become a Visiting Senior Research Scientist with IHMC, and that he is currently on the faculty at the University of South Florida. He stated that Dom has been quite helpful on a recent Blue Sky Report and we look forward to working with him on future research proposals. Dr. Ford also informed the Board that Peter Frankhauser is a visiting scientist in the robotics lab. He continued on to note that since our last meeting, IHMC has hired roughly 15 new research interns and these are in addition to the 15 new interns we discussed at the June meeting.

Dr. Ford mentioned that it has been a busy and productive summer notwithstanding the impact of the flood. He mentioned that Dr. Bonnie Dorr, IHMC associate director and

senior research scientist in Ocala, was accepted this summer into the 33rd Annual Leadership Florida annual class program that began in August explaining that she joins a short roster of previous IHMC selectees, including General Counsel Julie Sheppard, Associate Director Dr. Sharon Heise and Associate Director Dr. John “Row” Rogacki. He added that Phil Turner was recently appointed to the City/County Joint Storm Water Advisory Group and wished him good luck.

On the media front, Dr. Ford mentioned that the Discovery Channel has made several visits to IHMC that will lead to two or three segments that should air this Fall explaining that they have recently filmed the IHMC HexRunner breaking the world speed record for running robots, our sensory substitution research, and the Hopper exercise device developed for NASA.

Dr. Ford discussed activities in Ocala, explaining that much of the summer was dedicated to Robotics Camps including planning the camps, holding the camps, analyzing data, and making notes for next year. He mentioned that among the camp highlights: 41 students signed up for camp, and 40 completed camp. He mentioned that the feedback from parents and students was very positive and seven high school volunteers did a great job assisting the camp with four of the volunteers being existing Science Saturdays volunteers and the other three first time volunteers, one will be a new Science Saturdays volunteer, and one was a PhD student that IHMC will hopefully see in the future.

Dr. Ford continued his remarks explaining that it is fall once again and we have a great Science Saturdays program lined-up in both locations. He stated that Ursula and the other folks engaged in Science Saturdays continue to do an excellent job and that he was excited to announce that Lockheed Martin was sponsoring Science Saturdays in Ocala at the \$5,000 level adding that we are always pleased to identify new sponsors for this terrific outreach program.

The Evening lecture series is back in swing with a new Fall season featuring terrific talks in both locations announced Dr. Ford. In addition to the usual Spring and Fall lectures, he mentioned that this past July we added a rare summertime lecture in response to the Pensacola flooding by having David Waggoner talk and focus on innovative approaches to improved stormwater drainage and examine best practices from around the world. He thanked the Board members who have sponsored lectures stating that we appreciate their contributions.

Dr. Ford then informed the Board that the previous week, the Science Advisory Council (SAC) meeting was held in Pensacola on September 7th and 8th with Alain Rappaport, Raj Reddy, Joann Morgan, Dwayne McCay, Bill Mularie, and Al Harms in attendance. He explained that research presentations were made by Jerry Pratt on Humanoid Robotics and the DRC Competition, Peter Neuhaus on the Exoskeleton and the Hopper, Matt Johnson on Coactive Design, Bonnie Dorr on Human Language Technology applied to Event Detection and Impaired Speech Understanding and James Allen on Learning linguistics and Commonsense Knowledge. He reminded the Board that the SAC convenes about every 18 months and helps IHMC brainstorm on new directions and

innovations in research directions and funding sources. He added that this volunteer group comes with a sterling resume of achievement in both academic and professional careers and are charged with using their expertise to steer the broad research goals of IHMC. He explained that the board's members cover a range of disciplines and backgrounds and are leaders in government, corporate and academic arenas.

He concluded his discussion of the SAC by explaining that he was extremely pleased that a new member will be joining the SAC and that Dr. Paul Kaminski, one of the pioneers of stealth technology, has agreed to join the IHMC Science Advisory Board. Dr. Ford stated that Dr. Kaminski most notably has served as Under Secretary of Defense for Acquisition and Technology and until very recently as chairman of the Defense Science Board adding that it was in his capacity as DSB Chair where he had the opportunity to work with Paul on several important topics. He mentioned that Dr. Kaminski holds an undergraduate degree from the Air Force Academy, two masters from MIT and a PhD from Stanford in aeronautics and astronautics.

Dr. Ford then turned to the Foundation and giving programs stating that the inaugural IHMC Foundation Business Meeting was held on August 20, 2014 mentioning that the current Board of Directors consists of Ken Ford, Glenn Sturm, Julian McQueen and Randy Talbot with the following Officers: Glenn Sturm President; Randy Talbot Secretary; Ken Ford Treasurer. He stated that bylaws and a conflict policy were unanimously approved and the Board agreed to quarterly meetings with the Annual Meeting to be held each year between October 15th and November 15th. Dr. Ford stated that the Board is currently drafting its 501c3 Application and hopes to make progress on this at an upcoming meeting in October in the Gainesville/Ocala region.

He informed that he was very pleased to report that IHMC has received a \$100,000 cash sponsorship in support of the DARPA Robotics Challenge team from a well-known technology company. He mentioned that in appreciation of this gift, IHMC will acknowledge this generosity by placing the corporate logo on the IHMC Atlas robot and promotional material; host company personnel to visit IHMC periodically; support a workshop with DRC developers to provide the company insight into IHMC's approaches to perception and manipulation; invite their personnel to attend the DRC finals and be present in the IHMC garage; and involve other special partnership opportunities. He explained that this gift will definitely be beneficial to IHMC's efforts in the third and final phase of the DRC, and that IHMC is optimistic it will lead to future collaboration opportunities with this firm. He explained that we are currently ironing out details and anticipate doing a joint press release this fall. Dr. Ford also stated that in addition to the aforementioned gift, IHMC recently received a generous \$400k gift from an anonymous donor.

Dr. Ford then concluded his remarks explaining how much he appreciates everyone's service on the IHMC Board and the continuing support of IHMC and its important work. Dr. Ford then thanked Chair Ewers for the opportunity to provide his report and concluded his remarks.

Chair Ewers asked the Board members if they had any questions or additional issues to bring before the Board and hearing none, he concluded the September 15th meeting of the IHMC Board of Directors at 10:35 Eastern time.

Respectfully submitted,

Julie L Sheppard
IHMC Corporate Secretary