

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

Roll Call  
Chair's Greetings

Chair Ron Ewers  
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

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

Other Items  
Adjournment

IHMC Chair Ron Ewers called the meeting to order at 9:30 A.M. EST. Directors in attendance included: Dick Baker, Carol Carlan, Bill Dalton, Ron Ewers, Eugene Franklin, Chris Hart, Hal Hudson, Jon Mills, Eric Nickelsen, Mort O'Sullivan. Alain Rappaport, Jim Reeves, Ray Russenberger, Martha Saunders, Gordon Sprague and Glenn Sturm. Also in attendance were Ken Ford, Bonnie Dorr, 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 as a matter of housekeeping the next board meeting was scheduled for an in person meeting on February 8<sup>th</sup> and 9<sup>th</sup>, 2015 in Pensacola and asked all board members to note these dates on their calendar with a dinner event on Sunday, February 8<sup>th</sup> and the board meeting scheduled for 8:30 am to 12:00 pm central time on Monday, February 9<sup>th</sup>. With those comments, he moved into the meeting and introduced Action Item 1 being the discussion and approval of the September 15, 2014 minutes. A motion was made by Director Franklin and seconded by Director Baker to approve the minutes and the motion carried unanimously.

Chair Ewers then introduced Action Item 2, the Introduction of New Board Member Mort O'Sullivan. He informed the Board that J. Mort O'Sullivan III is the Managing Member of the Gulf Coast region of Warren Averett, LLC a CPA and Advisory firm adding that Mort has over 38 years experience in public accounting and also is a Trustee at the University of West Florida, a Board Member of the Gulf Power Company and sits on numerous Pensacola area boards. Chair Ewers added that Mort is also a graduate of

Leadership Florida and has won the Pensacola Bay Area Chamber of Commerce PACE Business Leader of the Year award. He asked the Board to join him in welcoming Mort O'Sullivan to the IHMC Board.

Chair Ewers then turned to Action Item 3 explaining that the External Audit and 990's as mentioned in September were in the process of being finalized. He then called on the IHMC Board Chair of Finance and Audit Dick Baker to discuss the audit and financials.

Director Baker thanked Chair Ewers and informed the Board that the external audit had been finalized and signed off on with no substantive issues, that the 990 had been signed and filed with the IRS, and that the IHMC financials were tracking well with prior years. A motion was made by Director Sprague and seconded by Director Carlan to approve the financial report and the motion carried unanimously. Chair Ewers thanked Director Baker for his report.

Chair Ewers then turned to Action Item 4, the Pensacola expansion, and reminded everyone that the expansion in Pensacola was delayed due to the flood and subsequent recovery and that Dr. Ford had asked the architects to raise the building another foot and this was accomplished this fall. He mentioned that the project was recently bid and that at this time he wanted to call upon Dr. Ford to update the Board on the expansion initiative in Pensacola and if appropriate, make a recommendation to the Board on how to proceed.

Dr. Ford thanked Chair Ewers and informed the Board that since November, the project had been back on track with design changes. With the drawings at 100% completion, the project was bid Thursday, December 4<sup>th</sup> by four local prequalified and selected general contractors including Greenhut, Morette, Williams-Brown, and Hewes. He informed the Board that the new design raises the building to an elevation of 13.0 feet to help protect the building from future flood damage and that discussions have been held with both the City of Pensacola and Escambia County regarding drainage studies and improvements to the storm water drainage system in the area surrounding the building. He continued on by stating that IHMC received the bids on the proposed Pensacola expansion this past Thursday and the bids are fairly close in price ranging from \$7.3M to \$7.7M. He mentioned that he, Phil Turner, Julie Sheppard, and the architects Carter Quina and Danny Gruendhofer have been through all of the bids and reviewed all of the associated packets as well as returning to the bidders with several follow-up questions and mentioning that all the proposal packets are available for Board review.

Dr. Ford continued his discussion explaining that the team evaluated the 4 proposals based upon the price of the work; major subcontractors to be used on the project; proposed team quality and experience; and availability and schedule for completion and that a review of the subcontractor lists shows no difficult or problem subs and in fact, many of the subcontractors that are listed are on all 4 teams. He added that we also confirmed with all of the contractors that the anticipated duration for the project would be thirteen months from the start of construction to substantial completion and that based on our review, our collective recommendation would be to award a contract to Hewes, the lowest base bid at \$7,327,000, subject to a satisfactory meeting with the

principal Ed Hewes in which Dr. Ford mentioned he would indeed participate. He added that Hewes has excellent references and has worked with our architects on other projects but mentioned that he does not personally know Ed Hewes and that if the meeting was not satisfactory in terms of meeting IHMC expectations that the second choice would be to Award to Greenhut Construction at a cost of \$7,691,000.

A short discussion then ensued and Director Carlan asked specific questions regarding other local projects performed by Hewes and for information and feedback regarding references on the other Hewes projects. Dr. Ford informed the Board that he had received rave references on Hewes performance and timely delivery of the project adding that Greenhut had done the renovations on the current IHMC facility and had done a tremendous job as well. Director Russenberger and Nickelsen asked about value engineering and were assured that this had been incorporated to insure that as much cost savings was included in the project as possible. Further discussion was held on the great local economic impact such a project would have on the community.

Chair Ewers suggested a draft motion would be in order and Director Reeves made the following motion: to authorize Dr. Ford to meet with Hewes Construction and enter into a construction contract for the new Pensacola facility should Dr. Ford feel that the contractor can meet IHMC expectations with a backup meeting and authority to contract with Greenhut Construction should Dr. Ford feel any hesitation in entering into an agreement with Hewes. Director Carlan seconded the motion.

Director O'Sullivan then recused himself from the vote stating that he performed services for the companies under discussion in the motion. Without further discussion, the motion was approved by the full board with Director O'Sullivan's recusal.

Chair Ewers then informed the Board that this concluded the action agenda items for this meeting mentioning how exciting it would be to be back in Pensacola in February and to see this expansion initiative moving forward! He then asked Dr. Ford to provide his report.

Dr. Ford thanked Chair Ewers for the opportunity to provide his report and added his thanks to Lewis Bear for his service on the IHMC Board and welcomed his designee, Mort O'Sullivan. He mentioned that as some Board members may recall, Mort is very familiar with IHMC as his son, Michael was an employee here some years ago before he left to start his own business.

Dr. Ford then turned to recent honors mentioning some exciting news that will become public on December 16<sup>th</sup> but informing the Board that their fellow Board member Dr. Alain Rappaport has been selected for induction into the rank of Fellow in the National Academy of Inventors. He explained that Alain is a prolific inventor who holds over a dozen patents related to the intersection of computer science and healthcare informatics and other fields and that the NAI Fellows Selection Committee chose Alain for induction for "having demonstrated a highly prolific spirit of innovation in creating or facilitating

outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society.” Dr. Ford informed the Board that Alain will be invited to attend the NAI Fellows Luncheon and Induction Ceremony to be held at the California Institute of Technology in Pasadena on March 20, 2015 for induction by the Deputy U.S. Commissioner from the U.S Patent and Trademark Office, Andrew Faile. He asked the Board to join him in congratulating Alain but to keep this news quiet for now.

Dr. Ford continued discussing honors by informing the Board how pleased he was to report that IHMC’s Matt Johnson recently received his Ph.D. in Computer Science from the Delft University of Technology. He explained that Matt has been a researcher with IHMC since 2002 and that he is passionate about making robotic systems more flexible, resilient and effective through human-machine teamwork. In support of this, Dr. Ford mentioned, Matt is interested in robot control theory, human-centered computing, human factors, and interface design and that currently Matt is involved in several IHMC projects including the National Robotics Initiative: Toward Humanoid Avatar for Co-exploration of Hazardous Environments; The DARPA Robotics Challenge; AFRL Micro-Air Vehicles where Matt is the PI on this project which is focused on enabling UAVs to operate in complex environments via human-machine teamwork and on a NASA rotorcraft noise minimization research effort. Dr. Ford concluded his remarks on Matt mentioning that he expects great things from Matt in IHMC’s future.

Dr. Ford then turned to his research update informing the Board that since the most recent board meeting in mid September, IHMC has received over \$1.6M in new funding, and we have approximately \$2.8M of additional approved new research funding in the negotiation process. He proceeded to inform the Board on several new efforts adding that 2014 continues to be a year of fiscal uncertainty and given that most of IHMC’s funding comes from very competitive federal R&D resources, the expiration of the current continuing resolution that funds the federal government through December 11<sup>th</sup> and the subsequent potential for government shutdown if a stopgap funding bill or omnibus funding measure is not passed remains a concern but he believed that was unlikely. He added that nonetheless, IHMC researchers have continued to pursue new funding opportunities from a variety of sources and that he would mention a few here today.

Dr. Ford began by mentioning that Dr. Bill Clancey has been funded by Harbor Branch Oceanographic Institute to participate in research of their Cooperative Institute for Ocean Exploration, Research and Technology adding that this program is sponsored by the NOAA and its funding was recently renewed for five more years to continue work in developing advanced underwater technologies, as well as exploring and researching regions of the eastern U.S. continental shelf and vulnerable deep and shallow coral ecosystems. He added that Bill will be involved in the new Exploration Command Center at Harbor Branch to participate in telepresence-enabled expeditions in the North Atlantic, the Gulf of Mexico and the Caribbean.

Dr. Ford then briefly mentioned a new collaboration 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 informed the Board that Peter's research will focus on system design, fabrication and human testing of customized lower extremity exoskeleton prototypes.

Dr. Ford then turned to his own work adding that since the previous meeting, he has been heavily involved in organizing Blue Sky meetings for NASA and the Air Force Research Laboratory. He mentioned that the NASA meeting theme was "Understanding the Possible Roles for Robotics in Support of Exploration Missions" and this two-day meeting was convened at IHMC in Pensacola. He added that the theme of the AFRL meeting, held in Jackson, Wyoming, was "Lessons from Genomically-Based Treatment, Prevention, Screening and Diagnosis of Disease." He concluded by stating that the next Blue Sky will be in Pensacola in February for NASA on the topic of novel exercise technologies in support of long duration human spaceflight beyond low earth orbit mentioning that this is a great concern due to bone and muscle loss associated with space flight.

Dr. Ford then shifted topics mentioning that as many on this board know, a favorite activity of mine is recruiting new researchers to the IHMC team and as everyone will soon appreciate, our new Associate Director in Ocala, Dr. Bonnie Dorr also seems to enjoy this crucial activity. He informed the Board that we have excellent new colleagues coming on board in both Pensacola and Ocala as well as several more to discuss at our next board meeting.

Dr. Ford stated that he was extraordinarily pleased to announce that Dr. Butler Hines will begin employment at IHMC on January 5<sup>th</sup> as a Senior Research Scientist adding that Butler received his Bachelor of Science degree in Physics and Mathematics, summa cum laude, from the University of Alabama in 1981, and Masters and Doctorate degrees in Astronomy from the University of Texas in Austin in 1985 and 1988, respectively. He mentioned that Butler's research interests include low-cost spacecraft designs, real-time high-performance computing architectures, space telerobotics, instrumentation for space astronomy, image processing, machine vision, and 3D visualization. Dr. Ford informed the Board that Butler will be detailed to NASA Ames Research Center in Silicon Valley via the IPA mechanism adding that most recently, Butler Hine was the Project Manager for the Lunar Atmosphere and Dust Environment Explorer (LADEE) mission. He stated that LADEE was launched on a Minotaur V rocket on September 7, 2013 and that LADEE gathered detailed information about the structure and composition of the thin lunar atmosphere. In addition, he added, scientists hope to use the data to address a long-standing curiosity: Was lunar dust, electrically charged by sunlight, responsible for the pre-sunrise glow seen above the lunar horizon during several Apollo missions? However, in addition to its science mission, Dr. Ford commented that LADEE tested several new technologies, including a new approach to modular spacecraft design and demonstrated NASA's first system for high-rate two-way communication using laser instead of radio waves adding that the laser communication demonstration made history using a pulsed laser beam to transmit data over the 239,000 miles from the moon to the Earth at a

record-breaking download rate of 622 megabits-per-second (Mbps). Dr. Ford stated that NASA is planning laser communication to be the next great advance in space communication adding that laser-based communications will be especially enabling for deep space missions. Dr. Ford concluded these comments stating that LADEE's mission ended on April 18, 2014, when the spacecraft's controllers intentionally crashed LADEE into the far side of the Moon and then he played a short video on LADEE. Dr. Ford then mentioned that prior to LADEE, Butler led the Small Spacecraft Division at NASA Ames Research Center and that he has also managed various other important NASA programs, such as the Robotic Lunar Exploration Program, the Computing, Information, and Communications Technology Program, and the Intelligent Systems Program. He added that for a period in the late 90's, Butler took an entrepreneurial break from NASA and was President and CEO of a Silicon Valley start-up company that developed advanced visualization tools for managing large corporate networks. He concluded by stating how very pleased we are to have Dr. Hine joining the IHMC team.

Dr. Ford then announced that Jose Benavides is newly appointed to IHMC as a Research Associate stating that Jose has been funded by NASA to provide lead engineering for three small, free-flying micro-gravity satellites operating periodically inside the international space station. He continued by adding that Jose will primarily be working out of NASA Ames Research Center in Silicon Valley, where he will be a control systems engineer with the Advanced Control and Evolvable Systems Group in the Intelligent Systems Division. Dr. Ford stated that Jose holds a bachelors and masters degree from Arizona State University in Electrical Engineering specializing in Control Systems.

Turning to Ocala, Dr. Ford stated how excited he was to report that three new hires have joined the IHMC-Ocala team and that full credit goes to Dr. Bonnie Dorr, Associate Director and Senior Research Scientist. He added that as many will recall, Bonnie came on board last March and is working to develop a stellar team around her research interests and that with these new hires, Bonnie is well on her way. Dr. Ford then asked Bonnie to provide a brief description of her new hires.

Bonnie thanked Dr. Ford and began by mentioning that Dr. Kristy Hollingshead began December 1<sup>st</sup> joining IHMC as a Research Scientist and that previous to IHMC, Kristy was employed by the Department of Defense, where she worked on analytics for deep understanding of large collections of text, to include combination of evidence, probabilistic knowledge bases, changepoint detection, and sentiment analysis. Before that, Bonnie stated that Kristy held a postdoc at the University of Maryland in College Park, working with Dr. Philip Resnik on machine translation pipelines adding that she received her Ph.D. and M.S. in Computer Science Engineering from the Department of Science and Engineering at Oregon Health & Science University and her B.A. in English-Creative Writing from the University of Colorado in 2000. Bonnie also added that Kristy was a NSF Graduate Research Fellow from 2004-2007 and that at IHMC, Dr. Hollingshead's research will focus on using natural language processing to model the syntactic and phonetic characteristics of people with neurological disorders such as Alzheimer's and Amyotrophic lateral sclerosis (ALS) and that her work is concentrated on the

development of automated methods for quantifying signals of health based on featural analysis of both speech and text conversations. Dr. Ford also mentioned that Kristy is already heavily engaged in writing two new IHMC research proposals.

Bonnie then turned to Dr. Gregory Dubbin, explaining that Greg, a newly minted PhD, begins today, December 8<sup>th</sup>, at IHMC in Ocala as a Research Associate. Bonnie explained that Greg's specialization is in the areas of machine learning and natural language processing applications and his recent dissertation explores applications of new techniques for learning syntactic properties of languages, e.g., that words like "bank" can be an action (flying a plane) or a thing (side of a river). She mentioned that Greg has ties to the central Florida region having received his BS in Computer Science from the University of Central Florida and his Masters in Computer Science from the University of Oxford where he also recently received his PhD. Bonnie added that Greg has interned at BAE Systems and at Motorola and that IHMC is very excited to have Greg joining the IHMC team.

Bonnie then turned the discussion to Dr. Archna Bhatia, a new IHMC Research Associate who will begin at IHMC in mid January. Bonnie stated that Archna was most recently working as a Visiting Postdoctoral researcher at Carnegie Mellon University, following a postdoctoral position at the University of Colorado and that she has also worked as a lecturer at Northwestern University, an Instructor at Loyola University Chicago, and as a research assistant at the University of Chicago and at the University of Illinois Urbana-Champaign. Bonnie explained that Archna completed her Ph.D. in Linguistics from the University of Illinois at Urbana Champaign and her research areas include computational linguistics, natural language processing and second language acquisition.

Bonnie concluded her discussion of the three new hires stating that it is everyone's expectation that Kristy, Greg, and Archna will all become valued team members and will nicely round out the existing and already excellent group that IHMC has assembled in the area of natural language understanding at the Ocala location that will work in close partnership with the team of talented natural language people in Pensacola.

Dr. Ford thanked Bonnie for her remarks and for doing such a great job on recruiting. Dr. Ford then turned the discussion to the upcoming Legislative session, adding that IHMC remains cautiously optimistic. He shared with the Board that Representative Marlene O'Toole from the Villages will Chair the Education Committee and Representative Clay Ingram from Pensacola will Chair Transportation and Economic Development Appropriations Committee and that Senator Don Gaetz will Chair the Senate Education Appropriations Subcommittee. He asked the Board members to be sure to thank all of these legislators for their support of IHMC.

Dr. Ford then turned his remarks to the facilities update stating that IHMC has been engaged in active expansion, maintenance, and repair activities at both Ocala and Pensacola. He added that as we have already discussed the new building for Pensacola, he would only address the remaining issues.

Dr. Ford began by mentioning that the building damage caused by the April flood has been completed on all IHMC buildings except the replacement and relocation of air conditioning units and replacement of interior doors, which are ongoing and that the remodeling of the ground floor restrooms and relocation and elevation of the air conditioning units is scheduled for the upcoming holiday period. He continued by adding that IHMC is working with FEMA on a mitigation effort to fund and install a floodwall and floodgate system for the main building, which will prevent future floodwater from entering the building.

With regard to Ocala, Dr. Ford commented that waterproofing and exterior site drainage repairs have been completed and landscaping has been restored and improved. However, he mentioned, due to the ongoing elevated radon gas levels, IHMC is currently designing a “sub-slab depressurization” system, which will suction radon gas below the ground floor slab in several locations and be piped out of the building through the roof at an appropriate location. In addition, he continued, a future unit to provide conditioned fresh air will be added to provide a slight positive pressure on the ground floor to help minimize radon intrusion. He concluded by mentioning that this work will be designed, completed, and tested prior to commencing the other elements of the ground floor renovation project.

Continuing with his remarks on Ocala, Dr. Ford stated that the ground floor partial renovation design has been completed and that the design will allow for additional offices, open workspaces, a large conference Room, an exercise room, enclosed storage areas, and a relocation of the Smart Home Lab. He mentioned that this project will also provide a more attractive and durable floor material for general use in the large open area stating that the project will be is currently anticipated to be bid and permitted in early 2015 with construction starting in February/March and completion by mid summer. He concluded by mentioning that this schedule is contingent on sufficiently mitigating the radon issue.

Dr. Ford then turned the discussion to education and outreach stating that as everyone knows, IHMC’s education and outreach activities are a matter of great important and some pride to everyone at IHMC and that over the years, we have conducted many such programs with Science Saturdays and the Evening Lecture Series being perhaps the premier elements.

Dr. Ford stated that September, October, and November Science Saturdays have come and gone and that all sessions were successful, and all accommodated 40 or more children per session with the help of high school volunteers. Topics in Ocala thus far this Fall have included “Chromatography” led by Dr. Manal Fakhoury, “Secret Codes” led by Dr. Micah Clark, and wonderfully named “The Gravity of It All” led Dr. Row Rogacki. He added that although all the session leads did a fine job and developed good rapport with the children, he has heard that Associate Director, Dr. Row Rogacki again really connected with the kids generating many questions and that the December Science Saturdays topic will be “Fun with Computer Science” led by Dr. Bonnie Dorr.



Turning to Pensacola, Dr. Ford mentioned that in September, Dr. Pat Hayes led bottle rockets and that with his custom bottle rocket launcher, he provided for a really great program and shouts of enthusiasm and appreciation were emerging from the IHMC grounds during both the 9 a.m. and 11 a.m. launches. He remarked that October was Chemistry, presented by UWF and November was balloon cars, which was hugely successful with IHMC presenter Dr. Chris Schmidt-Wetakam doing a terrific job. Dr. Ford concluded by mentioning that the December topic will be Big Data led by IHMC's Stephen Douglas.

Dr. Ford then turned to the Evening Lectures mentioning that these also continue to be very successful with standing room crowds and waiting lists in both locations adding that we will close out the season with the December talk in each location. In Pensacola, he stated that on December 11<sup>th</sup>, Jonathan Clark will present his lecture, "Surviving a Supersonic Stratospheric Freefall: The Red Bull Stratos Project" and that in Ocala on December 16<sup>th</sup>, Bob Knight will be speaking on "Florida's Springs, Aquifer, and Water Economy."

He concluded his outreach discussion by mentioning that we also have a wonderful spring line up in both Ocala and Pensacola and he would be pleased to discuss those speakers and topics at the next meeting that will be held in Pensacola on February 8<sup>th</sup> and 9<sup>th</sup>. He mentioned that while we had originally discussed Ocala as the location for this February meeting, we have rescheduled to Pensacola due to a NASA research meeting in Pensacola that same week and that we have secured rooms at the newly renovated Lee House for the out-of-town Board members and look forward to providing more information on this meeting in January but that he believed we would have our regular Sunday evening dinner followed by the Board meeting on Monday from 8:30 a.m. to 12:00 p.m.

Dr. Ford remarked that IHMC had an excellent Christmas party on Friday in Pensacola that was very well attended and thanked all who were able to stop by. He mentioned that the IHMC Ocala Christmas party was scheduled for Wednesday, December 17<sup>th</sup> and that all are all invited as well. He concluded his comments by remarking that he was aware the holidays get hectic and that he was hopeful that everyone could find some time to relax and spend some quality time with family. Dr. Ford informed the Board that he and Nancy would be taking a nice trip to Italy and that he was looking forward to returning all refreshed and relaxed for 2015.

Dr. Ford concluded his report by stating that everyone at IHMC very much appreciates the time and continued support of this IHMC Board and its important work. He thanked Chair Ewers and informed him that this concluded his report.

Chair Ewers thanked Dr. Ford and asked the Board members if they had any questions or additional issues to bring before the Board and hearing none, he concluded the December 8<sup>th</sup> meeting of the IHMC Board of Directors at 9:30 Central, 10:30 Eastern time.

Respectfully submitted,

Julie L Sheppard  
IHMC Corporate Secretary