

IHMC Board of Directors Meeting Minutes
June 24, 2013

Roll Call Chair Glenn Sturm

Chair's Greetings Chair Glenn Sturm

Action Items

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| 1. Approval of April 15, 2013 Minutes | Chair Glenn Sturm |
| 2. Adoption of 2013-2014 Meeting Schedule | Chair Glenn Sturm |
| 3. Establishment of Compensation Committee | Chair Glenn Sturm |
| 4. Discussion & Approval of Supplemental Retention Plan | Chair Glenn Sturm |
| 5. Discussion of an IHMC Foundation | Chair Glenn Sturm |
| 6. Discussion & Approval of Pensacola Expansion | Chair Glenn Sturm |
| 7. Discussion of Ground Floor Renovation in Ocala Bldg | Chair Glenn Sturm |

Chief Executive Officer's Report

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

Other Items

Board Photograph

Lunch

Adjournment

IHMC Chair Glenn Sturm called the meeting to order at 8:30 am CST. Directors in attendance included: Dick Baker, Lewis Bear, Carol Carlan, Ron Ewers, Eugene Franklin, Chris Hart, Jon Mills, Eric Nickelsen, Alain Rappaport, Jim Reeves, Martha Saunders, Gordon Sprague, and Glenn Sturm. Also in attendance were Ken Ford, Sharon Heise, Row Rogacki, Pam Dana, Alan Ordway, Ronnie Armstrong, and Julie Sheppard.

Welcome to everyone who is here this morning and thank you to those of you who were unable to attend in person but have dialed in this morning. We had a great dinner and conversation at the Lee House last evening with Chef Blake Rushing and his award winning food.

With those comments, I would like to move directly into our meeting.

Chair Sturm introduced Action Item 1, the approval of the April 15, 2013 Minutes. Director Baker moved to accept the minutes and Director Carlan seconded. There being no discussion, the motion carried unanimously.

Chair Sturm then introduced Action Item 2, the adoption of the 2013-14 meeting schedule and proposed the following dates: a teleconference call at 8:30 am Central time

on Monday September 16, 2013; a teleconference call at 8:30 Central time on Monday December 9, 2013; an in person meeting in Ocala on Monday February 3, 2014 from 8:30 to 12 Eastern time with a social dinner the prior evening Sunday February 2, 2014; and an in person meeting in Pensacola on Monday June 23 from 8:30 to 12 Central time with a social dinner the prior evening Sunday June 22, 2014. Hearing no objections or concerns, Director Hart moved approval of the 2013-1014 schedule and Director Nickelsen seconded. The motion carried unanimously. Chair Sturm mentioned that as the other topics in today's meeting unfold, there may be special meetings this year between now and December.

Chair Sturm then introduced Action Item 3 concerning the establishment of a compensation committee to review and assess Dr. Ford's compensation structure. He reminded the Board that all were all in Agreement that Dr. Ford has done an outstanding job at IHMC and that the Board wanted to insure that he was adequately compensated and remained at IHMC and that while we agreed to continue with the five year plan that had been adopted by this Board, time was passing and as we were beginning its last year, it is time to establish a new plan and take another comprehensive look. Chair Sturm announced that the compensation committee would include himself, Dick Baker, Ron Ewers, Alain Rappaport and Bill Dalton. He informed the Board that this committee would return to you with our suggestions and plan for future years and he congratulated Dr. Ford on his fine performance.

Concluding that agenda item, Chair Sturm introduced Agenda Item 4 and the discussion of a Supplemental Retention Plan to insure successful recruitment and retention of star performers at IHMC. He stated that one area that IHMC needs to address is to offer an incentive to Scientists and other employees who add financial value to IHMC to think of IHMC employment as a commitment they plan to make into the foreseeable future. To that end, he added that he has been reviewing best practices and what very progressive organizations are doing to insure longevity and that one such vehicle is to offer star performers a supplemental retention plan that allows IHMC to fund a life insurance annuity plan in the name of the employee that becomes their personal compensation when they hit a designated time frame with IHMC.

Chair Sturm continued the discussion by mentioning that we have been reviewing a number of plans and are currently discussing a life insurance annuity based design that allows the benefits to be held by IHMC for a set term, and then owned by the participant and provide a tax favored, flexible distribution option. He assured the Board that once we have identified a plan, we will be pursuing a legal opinion that such a plan would not jeopardize our non-Erisa status. Chair Sturm concluded by stating that while this is an IHMC employee benefit and does not require specific board action or approval, he believed everyone would be interested in our long term objectives to recruit and retain the most talented employees in Pensacola and Ocala. This discussion continued on with Board members offering resources and assistance that could be shared.

Chair Sturm thanked the Board for their willingness to provide resources and moved into Agenda Item 5 involving a discussion of establishing an IHMC Foundation. He

mentioned that as many know, he is passionate about the need for IHMC to begin aggressively fundraising and build an endowment for recruiting additional world class scientists and researchers and meet future facility needs. He informed the Board that IHMC would be exploring the benefits of such a Foundation and would be returning at a later meeting to discuss this as it would necessitate an independent board to fundraise and conduct business activities that are beyond the scope of this Board and could also provide a vehicle that would be available for the development and commercialization of technologies should we chose to utilize it for that purpose in the future.

Chair Sturm then introduced Agenda Item 6 regarding a discussion and approval of a Pensacola Expansion commenting that this is a very exciting time for IHMC and as everyone knows, in Pensacola, we are greatly in need of expanded lab space including a robotics lab, additional lab spaces for other growing research areas, bigger board facilities as anyone can see from this very cramped room today, and meeting and conference space. He mentioned that the last few lectures have topped 260 people in attendance and IHMC is now turning people away on a regular basis but that these are all very good problems to have making space and expansion a huge priority. Chair Sturm also reminded the Board that IHMC is also are now renting 3 facilities on Alcaniz Street and would welcome the opportunity to bring everyone back to a central location on our property. He commented that staff is looking at possibly the last chance to take advantage of historically low interest rates and that while the current debt service on 40 S. Alcaniz does not come due for 2 more years, 2 years flies by and we that now is perhaps the best time to solicit proposals for financing new facilities with a payoff of the existing mortgage.

Chair Sturm mentioned that one option we find to be very promising is to utilize the AA credit rating of the County to secure bond or bank financing of up to 12 million dollars to finance the new facility and pay off the existing mortgage adding that we have individually met with all 5 of the Escambia County commissioners, been to the Committee of the whole and secured the unanimous County approval this past Thursday night June 20th to utilize their credit to secure financing of up to \$12 million through a bond or bank issue. He noted that the County believes that they can secure this debt in the 2-3% interest rate over a 20 year term and currently the County is working up a term sheet that would be sent to the County Financial Advisor and Legal to develop an RFP and Lease Agreement. Chair Sturm advised the Board that this would require IHMC to sign over its facilities to the county to secure the debt and receive a long term lease with ownership to IHMC restored at the conclusion of the repayment of the debt service. He added that while the terms and details of the agreement remain to be worked out and we will return to you with the specifics, we would like to ask this Board to vote in concept on the proposal to utilize the County's credit rating to borrow up to \$12 million to pay off existing debt service and begin plans to expand on the property at 40 S. Alcaniz Street. The Board discussed in general their appreciation for Escambia County's willingness to show support for industry growth locally and the wisdom of looking at conventional fixed rate financing while interest rates remained low.

Director Sprague moved the item to explore financing options using the credit resources of Escambia County for refinancing and new construction at 40 S. Alcaniz. Director Ewers seconded the motion and the motion carried unanimously. Chair Sturm thanked the Board for their support and mentioned that Dr. Ford will be discussing the proposed expansion and showing some preliminary renditions in his upcoming report.

Chair Sturm then introduced Agenda Item 7 involving the Discussion of a ground floor renovation in Ocala mentioning that the Ocala facility is also out of space and that IHMC is looking at options for renovating the ground floor of that facility and adding 6 more offices and lab space. He mentioned that IHMC is interested in plans that would incorporate the existing design into the downstairs and insure that water intrusion and lighting would not be an issue adding that while this agenda item does not require formal action, he wanted everyone to be aware that this is on the agenda and will be discussed in greater detail this fall.

Chair Sturm then asked Dr. Ford to provide his report.

Dr. Ford thanked Chair Sturm for the opportunity to provide this report and began by stating that as one could guess, we have had much going on since our last meeting and that he would start with the research report. He mentioned that as he had discussed at previous board meetings, Sequestration is beginning to have an effect on federal research funding agencies, in particular those associated with the Department of Defense. He commented that IHMC has had some isolated cases of funding being delayed or in one case reduced as a result of the across the board spending cuts, but in general we are feeling cautiously optimistic that we will be able to navigate the continued fiscal uncertainty in Washington. He added that since the last board meeting in April, IHMC has received five new awards or funding increments totaling just over \$1.7M in new support and that he would briefly discuss a few of these exciting projects.

To begin, he noted that in new awards, Dr. Sharon Heise received authority to proceed with work to support U.S. Strategic Command (STRATCOM) in revamping their global command and control processes adding that as one may have noted from recent events where STRATCOM deployed a pair of B-2 bombers to South Korea in what was billed as a “quiet flexing of muscles,” the mission of the Command is essentially to promote global stability. He informed the Board that in support of this, an IHMC team including Dr. Bill Clancey, Dr. Robert Hoffman and Dr. Jeff Bradshaw will be exploring the hypothesis that information sharing and structured collaboration among STRATCOM decision makers will improve timeliness of decisions, enhanced situation understanding and integrated course-of-action development. He commented that the IHMC team will be designing a role-playing experimental campaign to demonstrate this conjecture (which we believe to be true), as well as managing information sharing aspects of the experiments.

Dr. Ford then noted that Dr. Niranjani Suri has also received a new award from the Office of Naval Research to extend his work in federation and transport services for tactical network environments adding that federated and service oriented architectures play an

important role in supporting timely exchange of information in network-centric warfare environments. In addition to enhancements of Niranjana's previous work in this area, Dr. Ford commented that this new program will involve experimentation and evaluation in laboratory settings and field exercises with Marine Corps.

Dr. Ford informed the Board that Dr. Dave Atkinson received his second year funding from the Air Force Office of Scientific Research to study the role of imputed benevolence in humans granting trust to autonomous systems adding that board member's might recall that the central premise of Dave's research is that specific technical attributes of autonomous systems, when appropriately measured and portrayed, are machine "traits" that can be formalized as analogous to human traits of interpersonal trust. He concluded by mentioning that benevolence is one such trait that can drive human acceptance of and calibrated trust in autonomy.

In other research news, Dr. Ford mentioned that Dr. Anil Raj's team has also received a new funding increment from a motorsports firm to continue development of a novel motorsports information display that will augment driver performance during training and racing via a wearable tactile interface. He stated that IHMC will focus on developing a graphical user interface for use with a hardened system to map vehicle sensor data to torso-worn tactile display for specific race vehicles. Dr. Ford then showed a brief video demonstrating the research.

Dr. Ford then mentioned a topic about which we are incredibly excited stating that IHMC is engaged in a world-wide robotics Grand Challenge event, a very big deal with over 100 teams from around the world attempting it, and 22 teams good enough to pass the qualifying tests. He added that this past Thursday was the final day of the three-day shootout and showed the Board the unofficial scores for the DARPA Virtual Robotic Competition asking that this information not be shared until DARPA officially releases the results on June 27th and that IHMC would keep everyone posted on the very promising results. He mentioned that one consequence of finishing in the top 6 teams, will be receiving a Boston Dynamics Atlas robot in late July and then having 5 short months before the next competition with real robots in late December adding that things will get interesting as we move into the hardware phase.

Dr. Ford informed the Board that IHMC recently hosted a two-day Blue Sky meeting for the Air Force Research Laboratory at Seaside on May 8th and 9th mentioning that this meeting focused on new emerging technologies that will lead to the ability to quantify the warfighter. He commented that this was a great opportunity for a small group of high-level scientists to engage on discussions about topics such as wearable body monitoring, human automation systems, and the coupling of the human and machine elements of a weapon system. He added that in addition to himself, Bill Clancey and Anil Raj from IHMC participated in this meeting and that he personally wanted to send a big thank you to Hal and SuEllen Hudson for graciously donating their guest apartment in Seaside to assist us with deferring some of the IHMC costs for the meeting. Dr. Ford then showed Bill Clancey's slide show from the Seaside meeting.

Speaking of Bill Clancey, Dr. Ford mentioned that he was very pleased to report that after sharing Bill Clancey with NASA Ames, he is returning to IHMC full time effective this past Monday, June 17 noting that Bill has been employed the past 15 years working at NASA Ames on an IPA, or Intergovernmental Personnel Assignment leading NASA's effort in "human-centered computing." He commented that Dr. Clancey's experience included 17 expeditions, including five visits to Devon Island as part of the NASA Haughton Mars Project, five stays in the Mars Desert Research Station as "commander," and studying field science in five states and on an island off Belize. Dr. Ford stated that NASA allowed Bill the opportunity to bring together his knowledge as a computer and cognitive scientist with his lifelong interests in space science, photography, and writing which led to his book, Working On Mars, recently published by the MIT Press. Dr. Ford informed the Board that during his time at NASA Ames, Bill helped develop a fully integrated surface EVA system for astronaut self-sufficiency, called Mobile Agents, under the rubric of "automating CapCom." Dr. Ford added how delighted everyone was to have Bill return to IHMC full time and that the Board could be assured that they would hear more about Bill's work as he reintegrates into the research arena.

Dr. Ford then mentioned that as some members of the Board would recall, he has spent some portion of the last 2 years recruiting a well-established scientist in the area of natural language processing to round out our already exceptional group at IHMC and that the recruitment became even more interesting this Spring as IHMC was one of many organizations interested and actively competing for her talent. He stated that while her name was embargoed currently, he was pleased to say that she has accepted a position at IHMC and will join the Ocala team next spring and more details on the new hire will be forthcoming later this fall.

Dr. Ford then informed the Board that another new hire was John Yamokoski, who answers to and joins IHMC from Oceanering Space Systems. Dr. Ford noted that JD completed his Ph.D. in Mechanical Engineering at the University of Florida in 2009 previous having done an M.S. at UF and a B.S. at Purdue and that J.D. will be our first fulltime employee in Houston supporting Johnson Space Center where he will serve as Chief Software Architect in the robotics group. Dr. Ford further commented that IHMC was hopeful that JD's presence and excellent technical skills with further build IHMC's relationship with JSC and that we are pleased to have him on the IHMC team as of July 1st, 2013.

Dr. Ford mentioned that in addition to these three senior-level researchers, IHMC has added two BS level team members as permanent staff and a slew of summer interns (nearly 20). He noted that these summer visitors run the gamut from those still working on their undergraduate degrees to PhDs and that although many are working in the bustling robot laboratory, there are summer visitors in several research group and in both Pensacola and Ocala.

Dr. Ford informed that Board that we are extremely pleased to have negotiated a formal affiliation agreement with the University of Florida adding that this process is complicated and in fact, the discussions to form an affiliation agreement began in September 2011 after the UF-IHMC research day, but that happily, it is concluded and was signed June 5, 2013. He noted that this Agreement will allow for research collaborations, joint hires, student interns, space sharing and does the initial legwork for intellectual property and sharing of proprietary information to enable researchers from both organizations to communicate and work together in a smooth and efficient manner. He concluded by stating that IHMC is very excited about adding UF to our affiliated universities.

Dr. Ford turned the discussion to the Florida Legislative session remarking that happily it has concluded and that IHMC emerged with its \$2.7 million in funding intact, similar to last year and adding that we are very happy with the support we received from the Florida Board of Governors and the Governor to place the funding requests in their respective budgets. He stated that we are also pleased with the house and senate support of IHMC and he thanked all of the board members for all that they do throughout the year and during session to help IHMC maintain a positive presence in Florida. Dr. Ford mentioned also that despite the challenging and uncertain legislative environment in Washington, IHMC continues to appreciate the support of our elected officials locally and nationally.

Dr. Ford then turned to expansion issues noting that with the new Ocala hiring comes the need to consider an Expansion in the Ocala facility adding that IHMC has exhausted most of the offices on the main floor. With the expectation that the new hire will recruit new talent, Dr. Ford stated that it is time to plan the renovation of the ground floor and that he was contemplating new offices in the space that sit above ground with outside light and new lab space in the additional part of the first floor. He mentioned that we would be coordinating a group from the original architect and design firm to visit the facility and brainstorm on a renovation that blends in to the main floor and maintains our LEED gold status. He concluded by noting that this is a great problem to have, but one that will take some time and thoughtful planning and that the Board would receive more detail in the near future.

Dr. Ford then moved the discussion to the Pensacola stating that as was discussed in the agenda, we are engaged daily in discussions on the expansion of the physical facilities in Pensacola and the build-out of space for the robot lab, executive offices, a new board room facility to accommodate the expanding Board and meeting and conference space facilities. Dr. Ford then presented a series of slides depicting various renditions of a proposed expansion.

Dr. Ford then turned the discussion to Ocala operations asking IHMC Associate Director, Row Rogacki to update the Board on Ocala. Row thanked Dr. Ford and informed the Board that the Ocala evening lecture series continues to be a huge success, with average attendance during the spring about 200 and with funding support that remains strong. He also noted that the Science Saturdays program is also going very well in Ocala, operating

at or near capacity each month and gave special thanks to Ron Ewers who has been helping IHMC make connections within the community to help raise funding support. In early May, Row informed the Board that he took a Science Saturdays lesson on the road to Marion Oaks elementary school in south Marion County, where 130 3rd through 5th graders participated in a fun, hands-on session on “Gravity” and that during the last 30 minutes of the lesson, he answered questions from the students about gravity, space and any number of other topics that could only be conjured up in an elementary schooler’s mind. He also mentioned that twenty-two kids and two high school volunteers participated in a boat trip on the Silver River as a follow-on to the May Science Saturdays lesson on “Water.”

Row also mentioned that as Board members may recall, there was a summer robotics camp at IHMC in Ocala last year, and it was a tremendous success because 60 kids had a fun, hands-on learning experience. After careful deliberations, he stated that IHMC decided to repeat the camps this year and that these camps will be for 6th through 9th graders, with 20 students in each of three week-long sessions beginning the last week of June. He noted that 57 of the 60 slots are already filled and that with thanks to generous support from Cheney Brothers, the College of Central Florida, FLATE, Lockheed-Martin, MTI, the Ocala Star-Banner, Workforce Connection and Daniel Sturm, we are able to provide scholarships for 23 of the 60 students. Row mentioned that this year, there will be brand new Lego Mindstorm robot kits to enable the students and teachers to spend more time on building and programming the robots and less time on trouble-shooting and that once again, the camps would visit the Lockheed-Martin Ocala facility to show the students robotics in a real world setting.

Row also informed the Board that in December, IHMC Ocala hosted a number of senior officials from Embry-Riddle Aeronautical University to discuss potential areas of research collaboration and that the ERAU group traveled to Pensacola for a meeting with IHMC leadership in January. Row stated that he and Sharon Heise conducted a follow-up visit to Embry-Riddle in May, where they met with about 20 faculty members to further define areas of mutual interest. With that, Row concluded his remarks and thanked Dr. Ford for the opportunity to provide his report.

Dr. Ford thanked Row and turned the discussion to summer in Pensacola, stating that IHMC is once again hosting IHMC TechConnect 2013 in partnership with the Pensacola MESS Hall to encourage high school students to learn more about science and engineering both through exposure to on-going research as well as community outreach. He added that at IHMC, the participating teens will tour labs and meet with scientists in formal and informal settings and that they will receive instruction in either introductory JAVA programming or mechanical design. At the MESS Hall, Dr. Ford commented that the high school students will work with visitors, sharing their knowledge of science, lead design challenges, give special presentations, and generally assist visitors as well as have the opportunity to design new activities for share with the visitors.

Dr. Ford then turned to the upcoming adult outreach, commenting that he felt the Board would be interested in the lineup for the fall evening lecture schedule and that as everyone would recall, there are no Evening lectures in the summer months.

He mentioned that as of now, the Fall's talks include: in September in Pensacola, Dr. William Davis, a prominent cardiologist, will discuss his NYT best selling book, "Wheat: The Unhealthy Whole Grain," and that in September, in Ocala, Dr. Tom Jones, a NASA astronaut and IHMC employee, will present a lecture titled, "Beyond Earth: America's Future in Space." He followed up that in October, Michael Anastasio, recent former director of Los Alamos National Laboratory and former director of Lawrence Livermore National Laboratory will visit Pensacola and give a lecture, and that in Ocala, also in October, Quint Studer will give a talk about "being an informed healthcare consumer."

In November, Dr. Ford mentioned that in Pensacola, Dr. Joe Hibbeln, a prominent researcher, will present the Mental Health Benefits of Omega-3 Fats for Children and Adults and that in November in Ocala, Dr. Michael Holick will present a talk titled "The D-Lightful Vitamin D for Good Health."

He concluded the fall schedule with December bringing Dr. Paul Kaminski, currently chairman of the Defense Science Board, and often considered the "father of stealth" to Pensacola and Alessio Fasano in Ocala to wrap-up our Fall Season with his talk on our microbiome and our codependence with our gut bacteria. As always, Dr. Ford invited Board members to let him know if they had any interest in meeting the speakers.

Finally, Dr. Ford mentioned that he has been asked to serve on the Advanced Technology Board (ATB) which supports the Office of the Director of National Intelligence (ODNI) and that the 12 member ATB exists as a forum for experienced individuals to engage in a discussion with IC leadership and to provide a variety of perspectives on issues critical to the ODNI and the Intelligence Community (IC). He added that this will likely prove to be an interesting exercise.

Dr. Ford concluded his remarks by telling the Board how much he appreciates their faithful and tireless service and time given to this IHMC Board. Dr. Ford thanked Chair Sturm for the opportunity to provide his report.

Chair Sturm thanked Dr. Ford for an excellent report and added that on behalf of the Board, everyone is delighted with the progress this past year and the excitement of expansions in Pensacola and Ocala. He then asked if there were additional items for the Board and hearing none, he informed the Board members that everyone would be walking to the Robot Lab at 100 S. Alcaniz Street to view the Fastrunner robot and then returning to Building 40 for lunch and a group photograph. The IHMC June 24th meeting was concluded at 11:15 a.m.

Respectfully submitted,
Julie Sheppard, Corporate Secretary