



IHMC Board of Directors Teleconference Meeting

Monday, June 23, 2014

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

Roll Call

Chair Glenn Sturm

Chair's Greetings

Chair Glenn Sturm

Action Items

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| 1. Approval of February 10, 2014 Minutes | Chair Glenn Sturm |
| 2. Election of Board Officers for 2014-16 | Chair Glenn Sturm |
| 3. Adoption of 2014-2015 Meeting Schedule | Chair Glenn Sturm |
| 4. Discussion and Approval of Supplemental Retention Plan | Chair Glenn Sturm |
| 5. Update on IHMC Foundation | Chair Glenn Sturm |
| 6. Discussion of Pensacola Flooding and 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

Agenda item 1:

Florida Institute for Human and Machine Cognition, Inc.
June 23, 2014

Issue: Approve minutes of February 10, 2014

Proposed action: Approval of Minutes from Board of Directors meeting held
February 10, 2014

Background information: None

Attachments: February 10, 2014 Minutes

IHMC Board of Directors Meeting
Monday February 10, 2014
8:30 a.m. CST Meeting; 9:30 a.m. EST

Roll Call	Chair Glenn Sturm
Chair's Greetings	Chair Glenn Sturm

Action Items

1. Approval of December 9, 2013 Minutes	Chair Glenn Sturm
2. Discussion & Approval of IHMC Foundation	Chair Glenn Sturm
3. Pensacola Expansion Update	Chair Glenn Sturm
4. Ocala Ground Floor Renovation Update	Chair Glenn Sturm

Chief Executive Officer's Report

1. Research Update	Dr. Ken Ford
2. Federal Legislative Update	Dr. Ken Ford

Other Items

Adjournment

IHMC Chair Glenn Sturm called the meeting to order at 8:30 A.M. CST. Directors in attendance included: Dick Baker, Lewis Bear, Carol Carlan, Bill Dalton, Ron Ewers, Eugene Franklin, Hal Hudson, Jon Mills, Alain Rappaport, Ray Russenberger, Martha Saunders, Gordon Sprague, and Glenn Sturm. Also in attendance were Ken Ford, Sharon Heise, Row Rogacki, Alan Ordway, Carl Wernicke, and Julie Sheppard.

Chair Sturm welcomed everyone present in both Ocala and Pensacola and thanked all the board members that dialed in this morning. He stated that as a matter of housekeeping, the next board meeting is an in-person meeting scheduled for June 22nd and 23rd in Pensacola adding that Sunday night June 22nd will be a dinner event with the Board meeting scheduled from 8:30 AM to 12 PM central time on Monday the 23rd. he asked everyone to note these dates on calendars and added that more information will be coming in mid spring.

With those comments, Chair Sturm moved directly into the Board meeting introducing Action Item 1 being the discussion and approval of the December 9, 2013 minutes. Having a motion to approve by Director Ewers and a second by Director Sprague with no additions or deletions, the motion carried unanimously.

Chair Sturm introduced Action Item 2 on the discussion and approval of the IHMC Foundation. Chair Sturm commented that it has been a priority as Chair to set the stage for the future of IHMC and to insure that we as a Board leave IHMC well secured for future success. He mentioned that the new building expansion in Pensacola and the ground floor renovations in Ocala are but two examples of these initiatives to secure

future growth and success. Following that he mentioned that another item that he was currently working on is to provide strong incentives for top IHMC Scientists and Leadership to fully commit their talent and resources to this organization. Working with Ken, he added that he has been able to identify key IHMC people and has been looking at options for employee retention solutions that will secure and stabilize top research rainmakers and key staff. He added that he would be returning at the June meeting to share the work on this and ask for approvals on these incentive plans.

Today, however, he stated that he was asking the Board to consider and approve the creation of an IHMC Foundation and that he envisioned this organization to be an independent not-for-profit organization created to hold donations, accept assignments of technology from IHMC and license these technologies to other companies for cash, equity or other valuable assets. He suggested that initially he envisions a small Foundation that would be tasked with fundraising and pursuing naming opportunities for the new and existing IHMC buildings but that in time, this Board could assign intellectual property and technologies to this Foundation for opportunities that might arise that benefit both IHMC and the Foundation and allow IHMC to better position the technologies in the commercial marketplace but shelter IHMC from liability.

Glenn commented that he has worked with Julie on a very simple set of Articles that establish a bare bones foundation that includes him, Ken Ford, and Randy Talbot as the initial directors adding that for those who do not know Randy, he was the very successful fundraiser for the University of Florida and others. Glenn commented that Randy has visited IHMC and indicated his consent to serve on this Board should it be approved adding that Randy is well suited to helping establish and create a very successful Foundation and begin to secure a future financial portfolio for IHMC. Glenn closed his remarks stating that should the Board chose to approve such a Foundation, he, Ken, and Randy will work on bylaws and establishing IRS 501 c 3 status for the Foundation keeping the Board informed at every meeting of the Foundation and its progress. He then asked for comments or questions from the Board.

Director Carlan stated that the Foundation was an important step for IHMC and made a motion to approve that was seconded by Director Franklin to approve the creation of an IHMC Foundation with Ken Ford, Randy Talbot, and Glenn Sturm as the initial Board members. Director Dalton opined that this was an excellent way to have an arms length entity that can commercialize technology. Hearing no objections, the motion carried unanimously.

Chair Sturm then introduced Agenda Item 3 regarding the Expansion Update. He informed the Board that everyone was very excited to be designing plans for the new building and discussing the layout with the IHMC researchers and staff. He added that at this point, the external designs have been done and that Ken will add more detail on this but that he was happy to report that IHMC should be moving into the selection of a General Contractor phase in March with a start date of late April to mid May and that all so far seems to be moving along very smoothly.

He also mentioned that IHMC also hopes to be coming to the June Board meeting with designs for the renovation of the Ocala ground floor to add new office space. Adding that it is a great problem to have to need additional offices and that the design plans are coming along well, but also insuring that upgrades to the HVAC system and exterior wall - moisture solutions are also included in the project. At this time, Chair Sturm asked Dr. Ford to provide his report.

Dr. Ford thanked Chair Sturm for the opportunity to provide his report and immediately began to discuss the Federal legislative arena despite the challenging and uncertain legislative environment in Washington. IHMC continues to propose on new projects and look for additional opportunities at both the federal and private level. He added that Federal Research and Development budgets look largely unchanged for the coming year.

Dr. Ford then turned to the State Legislative Budget mentioning that IHMC is currently in the Governor's recommended budget for \$2,739,184. He then introduced one of IHMC's team members in Tallahassee, Matt Doster.

Matt thanked Dr. Ford for the opportunity to update the Board and briefly described the team's objectives for session and the roles of several influential house and senate elected officials on appropriations and other committees. He thanked all the Board members for their help in years past and asked them to speak highly of IHMC when they were in Tallahassee over the spring session.

Dr. Ford thanked Matt and echoed his comments and added that as we move forward this spring in the legislative session, he greatly appreciates any and all good words that you can share with Florida Senators and Representatives about IHMC and its important impact in our communities and in Florida more broadly. Dr. Ford then turned to the exciting news adding that as everyone knew, the IHMC Robotics team is back in Pensacola, ready to build on its strong overall second-place finish in the second phase of the DARPA Robotics Challenge (DRC) at Homestead Miami Speedway. He informed the Board that the next challenge will involve competing in the finals sometime early to middle of next year. Dr. Ford mentioned that IHMC's strong showing was marked by being the top-scoring team among the seven teams using the Atlas humanoid robot, built by Boston Dynamics, a private company recently purchased by Google and that IHMC also had the best performance of all of the teams in the "Wall" and "Doors" tasks. He stated that it was an incredible two days—full of ups and downs and that while IHMC had our share of problems he was amazingly proud of these young people. He told the Board that it was a really wonderful showing for the whole IHMC robotics team against the best from all around the world and that this IHMC team was up against 16 of the world's top robotics development teams. In addition, he added, many of the other top-scoring teams used robots they developed specifically for the competition but that the IHMC strong finish built on our first-place showing in the initial phase of the competition, the DARPA Virtual Robotics Challenge, conducted in June.

Dr. Ford informed the Board that by finishing among the top eight in the second phase, IHMC qualifies for continued funding in the DRC from the U.S. Defense Advanced

Research Projects Agency and that he expects this will be roughly \$1 million in additional funding for the DARPA Robotics Challenge. He mentioned that the IHMC team is working with a fraction of the funding of corporate teams and other academic/not-for-profit teams with funding beyond DARPA adding that we are looking to identify some corporate sponsors.

Dr. Ford stated that he believed the Board would have been very proud of the 25-member team that represented IHMC in Homestead, and that not only was this a great group effort but the IHMC team spaces were also by far the most fun and festive. He commented that one former IHMC team member, now at MIT working on his PhD, was overheard telling his teammates what a great place IHMC was and he actively affirmed his colleague's impression that "they have more fun than we do." Dr. Ford mentioned that as IHMC was the only team from Florida or anywhere in the South, IHMC also had enthusiastic vocal support from a loud and active cheering section in the stands at the speedway.

Dr. Ford continued on by mentioning that IHMC scored only 4 points on Friday due to the schedule having them competing in only two of the eight tasks, but came back strong with 16 points Saturday adding that in the total trials, IHMC scored 20 out of a possible perfect score of 32. He stated that third place went to Tartan Rescue, from the Carnegie-Mellon University's National Robotics Engineering Center, which developed its own robot and that fourth place went to MIT that, like IHMC, used an Atlas robot. He informed the Board that first place, at 27 points, went to a team from SCHAFT Inc., a Japanese company owned by Google, which used a robot it developed specifically for the event. He closed the discussion by letting the Board know that there would be future updates as IHMC works towards the last and final phase of the competition. Dr. Ford then showed the Board several videos for the event.

Dr. Ford then turned the discussion to new research mentioning that with a compromise 2014 spending bill finally signed as of mid-January, IHMC is at last sensing some stability beginning to enter the federal funding environment. He stated that even though it has only been eight weeks since the last board meeting in December, and with the holidays in between, that IHMC researchers have been awarded six new projects for a total of approximately \$1M in funding with another \$600k in negotiation. He added that he would share details on a select few of these new projects.

One project Dr. Ford discussed is a new award of just over \$400K from the Intelligence Advanced Research Projects Agency (IARPA), where Dr. Robert Hoffman will be partnering with Charles River Analytics under the Strengthening Human Adaptive Reasoning and Problem Solving program. He mentioned that during this effort, Dr. Hoffman and CRA will study interventions to improve performance in well-educated adults, such as intelligence analysts, who are tackling complex tasks in information-rich environments. He added that the IHMC-CRA approach is to design and introduce microgames, or super short games that require problem or puzzle solving, for training purposes with the goal of making such training engaging as well as operationally beneficial.

Dr. Ford shared that Dr. Hoffman has also received an award from the Office of Naval Research to host a working group meeting at IHMC to examine accomplishments of naturalistic decision-making research and its applications to emerging defense challenges adding that the Air Force Office of Scientific Research has also provided funding for this anticipated seminal event, which will bring together experts from government, industry, academia and international institutions to document the state of the art of research in naturalistic decision making with respect to its contributions to and prospects for military applications.

Dr. Ford informed the Board that Dr. Alberto Cañas has received new NASA funding to extend the set of concept maps providing rationale for human space flight, and most importantly to support further development needed to make these maps available to the public via a downloadable App at Apple's store. He also added that IHMC's Dr. John Yamokoski is now detailed full time to NASA Johnson Space Center in their Software, Robotics and Simulation Division mentioning that while at NASA JSC, John will serve as Chief Engineer for humanoid robotics software development. He mentioned that IHMC anticipates that John will be instrumental in promoting the development of robotics capable of executing complex tasks such as those involved in disaster response scenarios, as well as in promoting technological advances that will aid the future of space exploration.

In addition, as mentioned earlier, Dr. Ford stated that IHMC has several other projects that have been selected for award and these are in the negotiation process and that he would save most of these for next time, but one effort he would like to highlight is Dr. Niranjani Suri's work in support of the Navy's Space and Naval Warfare Systems Command, or SPAWAR. In this latest project, Dr. Ford mentioned that Niranjani and his team will be advancing IHMC's agile computing middleware to support seamless communication and information access for the warfighter via tactical networks that are prone to disconnection, limited bandwidth, variable latency, and unreliability in general. He added that the foundations of this work are from previous research sponsored by both the Office of Naval Research and SPAWAR to provide tactical information services for "on demand" delivery of relevant and necessary information to a user, regardless of the source, in a timely manner. Dr. Ford stated that this collaboration is an excellent example of a sustained and productive research relationship developed over time with one or more customers in support of their ongoing needs.

Dr. Ford informed the Board that at the DARPA trials, IHMC displayed and demonstrated a new fast 6 legged robot named HexRunner that currently can move at about 25 mph adding that we do not believe there is any other versatile and lightweight robot moving at this level of speed and believe that in time, this version will reach speeds between to 45 to 60 mph in the next generation being tested on our large horse treadmill. Dr. Ford commented that the architecture is novel and the robot weighs only about 1.5 kg and consumes almost no energy adding that we were very careful to file patent protection on this new robot and its novel applications and mechanics prior to displaying it at the competition. He concluded by mentioning that similar to other technology at IHMC, this

is biologically inspired using features displayed in animal motion and is inherently stable with a virtual pivot point and can be operated by remote control and has 2 inputs, a throttle and steering mechanism. Dr. Ford then showed the Board several videos of the HexRunner technology he had described.

Turning to Expansion issues, Dr. Ford explained that since our last meeting, IHMC has been working on the Pensacola expansion and blending the new facility in the neighborhood. He stated that by zoning, IHMC is in the brick warehouse district, so the new building reflects the warehouse appearance, updated with modern touches describing the brick, steel, and concrete—all historical materials used in the area, and adding that the glass will allow natural daylight inside and make the interior accessible to the public.

Dr. Ford reminded the Board that this expansion building will also respect building heights written for the nearby Aragon residential district adding that IHMC is now working on interior plans and expect the first floor of the new building to largely consist of research labs, including an expanded Robotics Lab and a multi-sensory interfaces lab focused on sensory displays and human-machine interfaces. He described the second floor as featuring a glass-walled observation area for public tour groups and others to observe the Robotics Lab safely and without interfering with the work, adding that the lab is a popular tour destination for schools and other visitors. Turning to the third floor, Dr. Ford explained that this will hold additional offices, conference rooms, and research space and also a Board of Directors room where IHMC can comfortably hold a board meeting where there is room for all 16 Board members and IHMC staff. He reminded everyone that whether in Pensacola today or Ocala, that everyone could see that none of our current facilities has a boardroom that can comfortably accommodate the group if everyone attends. Dr. Ford stated that he believed construction could begin in April or May of 2014, and that IHMC will be working to select a construction firm this March. He added that we are also looking to expend the lecture hall but as a result of a packed summer and the intense scheduling required to make this happen, we are working on a 2015 construction start for that portion of the project adding that IHMC hopes to expand the lecture hall to a seating capacity of more than 300 people.

Dr. Ford concluded his discussion of the new facility mentioning that since our December meeting, IHMC has received conceptual approval from the City of Pensacola's Architectural Review Board on Dec. 19th and has held very positive meetings with Aragon residents. He mentioned that discussions on renovating the ground floor of our Ocala facility are also well underway and that the plan is to create 5 to 6 new offices and to relocate the Smart Home Laboratory as well as address water incursion problems and that the IHMC Scientists in Ocala are heavily involved in the planning and design of this new space.

Discussing Ocala, Dr. Ford mentioned that IHMC recently held a NASA Blue Sky meeting in Ocala, FL on January 29th and 30th, 2014 and that this was very well attended with 23 participants including 5 IHMC employees, Alberto Cañas, Anil Raj, Jack Hansen, Tom Jones, and Dave Atkinson. He informed the Board that the topic of this

meeting was Innovative Concepts for Incorporation into the Evolvable Mars Campaign. At that point Dr. Ford turned to Row Rogacki for more of an update on Ocala.

Row thanked Dr. Ford for the opportunity to comment and informed that Board that the Ocala evening lecture series continues to be a huge success and that every lecture since his last report has been sold out, reaching the capacity of the facility. He mentioned that funding support for the lectures remains strong with over \$70K of cash and in-kind contributions during CY 2013 and that he is currently having discussions with another potential supporter who may provide up to \$50K per year for evening lectures and other outreach activities. Row continued on to add that the Science Saturdays program is also going very well in Ocala, operating at or near capacity each month and that over 225 student participants in Ocala during the fall, of which 40% were minorities adding that in 2013, IHMC Ocala raised \$23K cash in support of Science Saturdays.

Row concluded his remarks by mentioning that starting next month, IHMC Ocala will be home to a new senior research scientist. In anticipation of additional hires, IHMC is expanding the office space and that the architect and interior designer who did the original renovation on the Ocala building are finalizing the design of the first floor offices.

Dr. Ford thanked Row and began to discuss outreach including lectures in both locations and the many new ones on the horizon.

He stated that Pensacola had a great crowd in attendance on December 12th for Paul Kaminski who spoke on Stealth from an Insider's Perspective and that already in 2014, IHMC has held 2 evening lectures with Larry Smarr on January 22nd discussing the Human Microbiome and the Revolution in Digital Health and just this past Thursday with Dr. Tom Dayspring discussing Arteriosclerosis.

Dr. Ford stated that still to come this spring in Pensacola is Dr. Bruce Ames on Vitamin and Mineral Deficiency on March 13th, Bill Shepherd on March 27th discussing Flying the First Expedition to the International Space Station and Dominic D'Agostino on April 9th discussing Metabolic Therapies and concluding on May 8th with Chuck Carlson speaking on the question of "How Risky is the Stock Market?"

In Ocala, Dr. Ford informed the Board that Alessio Fasano spoke on December 17th to a sold out crowd on Gluten Related Disorders, and Bill Klyn from Patagonia lectured on January 15th in a talk titled, "The Environment is the Economy." He added that still to come is Esther Gokhale next week on Posture and Walking, Joe Hibbeln on March 18th speaking on Omega 3 Fatty Acids and Mental Health, and Dr. Michael Okun on May 13th discussing Parkinson's Treatment and 10 Secrets to a Happier Life.

Dr. Ford then informed the Board that Science Saturdays is also up and running with topics such as electric motors, secret codes, roller coasters and Mathemagic in Pensacola this Spring and Lemon Batteries and Solar Cells, Water Cycle, Fossils and Gloop and other polymers scheduled in Ocala. He added that attendance is great in both locations

and that we have diversified and expanded the schools that attend and are having many new first time attendees. Ford commented that Ursula is doing a great job with this program and in recruiting new scientists and topics as well as attracting sponsors.

Dr. Ford then turned to Chair Sturm and concluded his report and thanking all the Board members for their confidence in IHMC. He added that he speaks for all of the employees at IHMC when he says how much we truly appreciate the time and commitment to the Institute.

Chair Sturm thanked Dr. Ford for an excellent report and asked if there were additional items for the Board. Hearing no additional issues, Chair Sturm adjourned the meeting and thanked everyone who dialed in and or attended in person wishing all a wonderful week.

The IHMC meeting was adjourned at 9:25 a.m. CST.

Julie Sheppard
Corporate Secretary

Florida Institute for Human and Machine Cognition, Inc.
June 23, 2014

Issue: Election of Chair and Vice Chair

Proposed action: Election

Background information:

The bylaws provide for the following regarding the election of a Chair and Vice Chair:

The officers of the Board of Directors are the Chair and Vice-Chair. The Chair and Vice-Chair shall be selected by majority vote of the Board of Directors, a quorum being present, at its first meeting and shall serve for a 1-year term to begin immediately upon selection. Both the Chair and Vice-Chair may have their term extended for a second year by vote of the Board of Directors, a quorum being present. Bi-annually thereafter, the Board shall select the Chair and Vice-Chair at its Annual meeting. The Chair and Vice-Chair shall be eligible for reselection for one additional consecutive term. Vacancies may be filled at any time by a majority vote of the members of the Board, but election or reelection shall normally take place at the designated Annual meeting.

The Chair shall preside at all meetings of the Board of Directors, call special meetings of the Board when necessary, and attest to actions of the Board. The Chair shall serve as an ex-officio member of all Board committees. The Vice-Chair shall act as Chair and perform duties of the Chair during the absence or disability of the Chair.

Attachments: None

Florida Institute for Human and Machine Cognition, Inc.
June 23, 2014

Issue: Schedule For Future Board Meetings

Proposed action: Approval of Meeting Schedule for 2014-2015 to include 4 scheduled meetings to be held as follows:

Teleconference 8:30 a.m. CST: Monday, September 15, 2014

Teleconference 8:30 a.m. CST: Monday, December 8, 2014

In Person Meeting: Sunday/Monday, February 8th – 9th, 2015, Ocala

In Person Meeting: Sunday/Monday, June 7th – 8th, 2014, Pensacola

Background information:

Discussion regarding setting the schedule of meetings for the upcoming fiscal year of the Board of Directors of IHMC.

The bylaws provide in Article 11 that the Board of Directors will meet no fewer than four times per fiscal year, at a time and place designated by the Chair.

The bylaws further provide that the Board may use telephone conference calls and other communications media technology to conduct Board business in the same manner as if the proceeding were held in person.

Meetings of the Board are open to the public and all official acts will be taken at public meetings. The schedule of meetings is available on the Institute website at <http://www.ihmc.us>

Attachments: None