IHMC Board of Directors Meeting Minutes

Monday, September 26, 2016

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

Roll Call Chair Bill Dalton

Chair’s Greetings Chair Bill Dalton

Action Items

1. Approval of June 6, 2016 Minutes Chair Bill Dalton

2. Discussion of Year End Financials/ Audit Finance Chair Dick Baker

3. Discussion and Action on 400 East Romana Street Chair Bill Dalton

Chief Executive Officer’s Report

1. Research Update Dr. Ken Ford

2. State Legislative Update Dr. Ken Ford

3. Facilities Update Dr. Ken Ford

Groundbreaking Celebration

Building Tours and Refreshments

Adjournment

IHMC Chair Bill Dalton called the meeting to order at 8:30 a.m. CST. Directors in attendance included: Dick Baker, Carol Carlan, Bill Dalton, Ron Ewers, Eugene Franklin, Hal Hudson, 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, Ronnie Armstrong, Alan Ordway, and Julie Sheppard.

Chair Dalton opened the meeting by thanking everyone who is here this morning and thanked Jon Mills who was unable to attend in person but has dialed in this morning. He remarked on the excellent dinner and conversation last evening with Chef Blake Rushing and his award winning food at his new restaurant Union Public House remarking that he hoped everyone enjoyed it as much as he and Karen.

With those comments, Chair Dalton moved directly into the meeting explaining that there were three action items to discuss this morning, followed by Dr. Ford’s presentation, and then everyone would adjourn for the building dedication, ribbon cutting and naming event for this great new facility.

Chair Dalton introduced Action Item 1 calling for the approval of the June 6, 2016 Minutes. Director Sprague moved approval and the motion was seconded by Director Baker. With no modifications, the minutes were unanimously approved.

Chair Dalton then called upon Director Dick Baker, Chair of Finance and Audit, to discuss the year end financials and the upcoming audit. Director Baker discussed the financials comparing end of June 2015 to June 2016 and commenting that contract revenues had significantly increased in the past year. He discussed the external audit by Saltmarsh explaining that once again the final audit looked to issue with no significant findings and congratulated IHMC on another good year.

Chair Dalton thanked Director Baker and moved on to Item 3, a discussion on the property at 400 East Romana directly across from the entrance to the new building. He mentioned that just two weeks ago, IHMC was approached by a landowner that owns a 20 by 178.92 square foot vacant lot immediately across the street from our new building, adding that it is zoned HR-2 which is the historic multiple-family zoning district. Aware that IHMC recently purchased the final piece by our pond, Chair Dalton told the Board that the landowner has offered to sell the piece to IHMC for $110,000 and that at this point, all we have done is comment that we would discuss the offer with this Board. He added that on the table are photographs of the vacant lot and fencing and the property appraisers report and deed and with that basic information, we would open the discussion up for comment.

A short Board discussion ensued and the consensus was that IHMC should explore what could be built in an HR-2 zone. Director Carlan made a motion seconded by Director Baker that after staff due diligence, Dr. Ford should make the decision on whether to purchase the lot. After no further discussion the motion carried unanimously.

Chair Dalton then informed the Board that the action and discussion items had concluded and he asked Dr. Ford to provide his report.

Dr. For Thank you Chair Dalton it is a pleasure to provide my report on such a momentous day. Dr. Ford began by thanking everyone who was able to attend the private building tour and dinner last evening. He commented that he hoped all enjoyed the evening as much as he did and that everyone was able to explore some of the new building. Dr. Ford also congratulated Martha Saunders on her selection as the 6th President of the University of West Florida stating that everyone at IHMC looks forward to working with her in her new position.

He mentioned that it has been quite busy the last several weeks working to get the new building open, furniture delivered and installed and meeting our self-imposed deadlines. He mentioned that IHMC held its first meeting in the building this past Tuesday and Wednesday, an Air Force Blue Sky meeting that utilized the large second floor Blue Sky/Integration lab with the DIRTT wall technology and also the three adjoining breakout conference rooms. He commented that the lobby made a wonderful setting for the reception at the end of the first day adding that everyone seemed visiting seemed to enjoy the event adding that it gave IHMC an opportunity with a small group to work out some of the smaller details, use the kitchen and fine tune the technology. He ended by stating that as all might imagine, it was a learning experience and we still have much to learn!

Dr. Ford then proudly announced that IHMC’s Chairman, Dr. Bill Dalton, is one of just seven people who were inducted this month into the Florida Inventors Hall of Fame, stating that this distinguished honor celebrates inventors whose achievements have advanced the quality of life for Floridians, and impacted our state and nation. He added that as many know, Dr. Dalton, an oncologist and CEO of M2Gen, a for-profit subsidiary of the Moffitt Cancer Center in Tampa, received the prestigious honor for a lifetime of invention and innovation. Most recently, Dr. Dalton developed Total Cancer Care, which are personalized protocols used for the treatment of cancer and decision tools used by clinicians throughout the world and Dr. Ford informed the Board that Total Cancer Care has one of the largest bio-repositories and data warehouses in the U.S.

He continued on by stating that Bill Dalton holds ten U.S. patents and was formerly CEO and President of the Moffitt Cancer Center, and prior to that deputy director of the cancer center and associate center director for clinical investigations, adding that Dr. Dalton also founded and chaired the Department of Interdisciplinary Oncology at the University of South Florida, where he is professor of oncology. Dr. Ford concluded his comments by saying that we all look forward to Bill’s leadership during his 2016 to 2018 term as our board Chairman. Chair Dalton thanked IHMC for nominating him for the honor and described the awards ceremony as a graet night for him and his family.

Dr. Ford then turned to the State Legislative Update informing the Board that we are

fortunate to have Matt Doster with us today, explaining that Matt is one of the Legislative Affairs team for IHMC and he will be updating us on what is new in Tallahassee and what to expect this coming session. Matt thanked Dr. Ford and stated how happy he was to be at the meeting and get the chance to be part of the dedication of such a magnificent research building.

Matt discussed the upcoming session and the changes and turnover within the Florida legislators, stating that this was the most change since 2010 adding that in the Senate, the majority of the change was due to redistricting. He briefly discussed the races in Pensacola and Ocala adding that the Senate race in District 8 would be tough to predict but that overall IHMC had excellent relationships with the favored candidates. He also explained the current negative forecasts in the revenue projections but thought that IHMC had stability in its message and growth and should fare well through the upcoming 2017 session.

Dr. Ford thanked Matt Doster for attending and updating the Board and then turned the conversation to new hires stating that as most would remember from the June meeting, IHMC had hired over 30 summer interns adding that most have now returned to school. He mentioned that on the table in the new newsletter there is a page dedicated to those summer researchers and we wish them success as they return to their universities to finish their studies. He also mentioned that there are also several pages dedicated to the new hires discussed in June and that he had several new ones not mentioned in that publication that he would like to discuss.

Dr. ford reported that IHMC has hired a new Research Scientist, Robert Griffin adding that Robert spent the summer here as a visiting researcher and is on the exoskeleton control project. He continued by stating that Robert is completing his PhD in Mechanical Engineering at Virginia Tech this spring and that while at VA Tech, Robert is lead controls engineer for a fully balancing exoskeleton project for the NSF Orthotic Lowerbody Locomotion Exoskeleton and for the ONR Shipboard Autonomous Firefighting Robot. Dr. Ford stated that Robert will join IHMC in May 2017 and will be a great young addition to the Robotics group.

He also mentioned that with IHMC this next year are Filippo Poltronieri and Emanuele Tagliaferro adding that both young men are here from the University of Ferrera on a one-year internship where both are graduate students pursuing degrees in Computer and Automation Engineering and will be working with Dr. Niranjan Suri on his ONR and AFRL projects.

Dr. Ford continued by mentioning that IHMC is also collaborating with the University of West Florida on developing joint hiring materials to assist both of us with recruitment efforts in cybersecurity and that we continue to pursue our joint PhD program in Intelligent Systems and Robotics. He mentioned that as planning for the PhD program moves forward, He would continue to update the Board on our progress but at this stage, UWF and IHMC has had successful reviews at the State University System Council of Academic Vice Presidents and with our external reviewers.

Dr. Ford then turned to the research update explaining that due to the forthcoming end of federal fiscal year 2016 and an anticipated continuing resolution for fiscal year 2017, new awards have slowed for the time being. However, he added, a large number of the awards that were discussed as pending last June have arrived, and IHMC now has received $4.7 million in new funding with another $1.2 million pending since the last meeting. He started by discussing the IHMC Ocala team led by Dr. Bonnie Dorr received an award under the Intelligence Advanced Projects Activity program CAUSE, or Cyber-Attack Automated Unconventional Sensor Environment explaining that the CAUSE program seeks to develop and test new automated methods that forecast and detect cyber attacks significantly earlier than existing methods by fusing information from an organization’s traditional internal sensors, such as host data, with less conventional external sensors, such as publicly available data sources. He mentioned that Bonnie and her team are partnering with prime contractor Leidos, a spin-off of SAIC founded in 2013, and their role is will be to adapt and apply natural language processing technologies to perform event detection and provide input to a Leidos process of generating probabilistic warnings of cyber attacks. He stated that this 3-year, $1.25 million effort on IHMC’s part is a significant win for Ocala and an important application of natural language processing to the high national priority area of cybersecurity.

He continued the discussion by adding that in cooperation with the U.S. Navy and its senior undersea medicine domain experts, Drs. Dawn Kernagis and Alberto Cañas are being sponsored by the Office of Naval Research to develop a unified collection of well-formed concept map-based knowledge models explaining decompression sickness, decompression modeling, central nervous system and pulmonary oxygen toxicity, nitrogen narcosis, high pressure nervous syndrome, immersion physiology, and submarine medicine in a clear and understandable way. He added that this collection of maps will be packaged into an iPad App for publishing in Apple’s iTunes store and on a website for browsing and that this archival record of undersea medicine expertise will be key to passing along experience and knowledge accumulated by senior researchers in an aging and shrinking community.

He continued the report by mentioning that in a related effort also being sponsored by ONR, Dr. Kernagis is leading an IHMC team to develop a roadmap for a new research program to optimize warfighter tolerance to hypothermic stress, and as a first step she will conduct a study that will involve knowledge capture, discussion, and strategic planning among world-class experts in fields of gut microbiome, synthetic biology, adipose tissue storage, metabolism, and human performance in undersea and hypothermic environments. He mentioned that combining the knowledge and input from these experts will be critical to exploring the feasibility of enabling warfighters to selectively store adipose tissue (brown versus white) on demand and thereby provide them a major advantage with respect to protection against hypothermic stress.

Dr. Ford then stated that Dr. Bill Clancey, in partnership with small business partner Eduworks, formerly Aqru Research and Technology, has received a significant phase 2 award from the Air Force Research Laboratory Human Effectiveness directorate to perform modeling and simulation for advanced design, development, testing and evaluation of autonomous multi-agent systems. He added that this effort is providing risk reduction for the integration of autonomous systems with manned systems, ensuring interoperability and incorporating a construct for human-machine teaming and trust. Dr. Ford stated that Bill’s role is to perform work analysis of human-autonomous system operations in the air combat domain, and to extend the Brahms work practice design modeling and simulation framework as a test bed for mixed manned and unmanned operations in contested airspace.

Dr. ford then mentioned that together with small business Quantum Applied Science and Research, IHMC’s Dr. Anil Raj has been funded by the Air Force Research Laboratory Human Effectiveness directorate to generate and validate a system consisting of a wearable sensor suite and cognitive gauges for a Quantified Warrior. Specifically, he stated, Anil is integrating modern, miniaturized sensors into a lightweight, unobtrusive, wearable suite that communicates with low-power, high performance processing elements to estimate various dimensions of user cognitive and physiologic state and then display these estimates to allow individuals and commanders to quantify cognitive workload, stress, fatigue, and other factors and adjust team tasking accordingly to improve mission effectiveness. He added that this approach has potential to greatly increase a warfighter’s ability to handle individual and team cognitive demands, particularly when addressing unplanned events, system failures, high task load, and maintenance of shared situational awareness during high operations tempo missions adding that this is a significant award of $2.3 million to pursue over 24 months of work.

Dr. ford then stated that Dr. Robert Hoffman is working with Aptima to develop coordination and performance metrics in command and control environments for the purpose of evaluating training effectiveness, under the sponsorship of the Air Force Research Laboratory Human Effectiveness directorate, commenting that specifically, Robert is helping Aptima to design, develop and validate a system for measuring human-agent performance and coordination within Air Support Operations Centers by helping them to develop a thorough understanding of relevant data from the ASOC, and subsequently the actions and behaviors of actors that impact coordination tasks and overall system performance. He continued by mentioning that in collaboration with Johns Hopkins University, Dr. Robert Hoffman has also received funding from U.S. Cyber Command, an armed forces command tasked with synchronizing defense of U.S. military networks, to conduct cognitive work analysis while observing Cyber Protection Team missions in the continental United States stating that this cognitive work analyses will result in descriptions of work processes and decisions, and evaluative scenarios, with the goal of identifying key ways to maximize efficiency and effectiveness of teamed analysts in a network operations center. He added that Cyberspace operations are an increasingly growing concern, and we believe this effort has potential to lead to a long research relationship with USCYBERCOM.

Continuing his research update, Dr. Ford mentioned that together with small business Modus Operandi, Dr. Kristy Hollingshead and Adam Dalton of IHMC’s Ocala office received an Army STTR award to develop and deliver a standalone system for online threat detection and behavioral analysis for enhanced situational awareness. He stated that collecting and analyzing online content for situational awareness is currently so laborious and error prone that it cannot be accomplished by a single user in an operational environment. In this initial phase of what we hope will be a multi-phase effort, Dr. Ford commented that Kristy and Adam are assisting in developing and demonstrating a prototype that will be installed on a single USB drive and that will be simple enough to use that a non-technical warfighter can rapidly gain a big picture understanding of relevant events, entities and communities by automatically “scraping” and contextualizing information from multiple sources such as Twitter, Facebook, LinkedIn, and blogs, and from multiple data types such as text, pictures, audio and video. He added that in this effort, Kristy and Adam are leveraging IHMC expertise in data science and natural language processing, and a significant goal is to bring in Pensacola researchers with expertise in data visualization into phase 2.

He concluded by mentioning that although IHMC only has one pending award at this time, it is significant and James Allen was recently notified by the Defense Advanced Research Projects Agency that they intend to fund an IHMC-led project titled “An Exploratory System for Complex World Modeling.” He stated that World Modelers, as the effort is informally referred to, is essentially a follow-on to James’ Big Mechanism project, where IHMC’s deep language understanding technology is being enhanced to read research abstracts and papers to extract pieces of causal mechanisms, or cause-and-effect processes, then to assemble these pieces into more complete causal models, and to reason over these models to produce explanations in the cancer biology domain. In World Modelers, Dr. Ford stated that the goal is to pursue a one-year, $1.2 million seedling effort to extend and adapt reading and analysis capabilities developed in Big Mechanism to create a capability to read descriptions of heterogeneous qualitative models, and to then assemble several specialized existing reasoning engines to create broad scale quantitative models predicting global, socio-economic phenomena. He mentioned that in particular, World Modelers will explore integration of existing climate, crop and market models to determine how factors such as climate change and economic policies impact agriculture and the distribution of food, and how these issues affect food security which in turn leads to the possibility of social unrest and eventually migration. On the computer science side, Dr. Ford stated that IHMC’s deep language understanding technology is being complemented by the University of Arizona’s fast information extraction and text processing expertise adding that the University of Florida will provide agricultural expertise and modeling, and the University of Chicago will provide climate inputs. He concluded his comments by saying that if this is successful, this seedling will become the basis for a new full-scale, multi-year DARPA program with multiple performers.

Dr. Ford then talked to the Board about the upcoming Cybathlon competition mentioning how pleased he was with the progress being made by Peter Neuhaus, Mark Daniel and the entire IHMC exoskeleton team on developing our new exoskeleton and training for the exoskeleton competition October 8th in Zurich, just a few weeks away. He informed the Board that the Cybathlon is a championship for people with disabilities who are using advanced assistive devices including robotic technologies with the individual competitions being comprised of different disciplines that will test the ability of pilots to navigate a series of everyday tasks while using a powered knee prosthesis, wearable arm prosthesis, powered exoskeleton, powered wheelchair, electrically stimulated muscles and novel brain-computer interfaces. He added that some of the assistive devices will include commercially available products provided by companies, but also includes prototypes developed by research labs and that there will be two medals for each competition, one for the pilot, who is driving the device, and one for the provider of the device. He stated that the main goal of the Cybathlon is to provide a platform for the development of novel assistive technologies that are useful for daily life and that the event is organized by ETH Zurich. Dr. Ford then showed the Board a video of the practice rounds for the competition, the Cybathlon trailer and a photo of the IHMC team.

Dr. Ford turned the discussion to educational outreach discussing the very successful Robotics Camp both in Pensacola (first camp with 40 students in attendance) and once again in Ocala (fourth year) explaining that the format included programming in the mornings and afternoons but lunchtime talks with scientists and the opportunity for small group question and answers with scientists and researchers. He added that everyone should have received a report on Science Saturdays in Pensacola this past fall and spring adding that it was interesting to note the reach of this program, we hit over 30 elementary schools and 40% of the participants are female with 25% of the participants being unrepresented minorities. He mentioned that the fall 2016 program looks to be both fun and interesting and that it was kicked off in Ocala on September 10th with Adam Dalton demonstrating Balloon Cars; to be followed on October 8th with Kristy Hollingshead on Computer Game Design; then November 5 with Sunny Ferrero on Food – What’s in It?’ and concluding on December 3rd with Jena Hwang engaging the children in learning about Secret Codes. In Pensacola, he mentioned that we started off this past Saturday with Pat Hayes and his famous and wonderful program on Bottle Rockets; to be followed on October 22nd with Fun with Chemistry with Jamie Zigterman and the American Chemical Society; then resuming on November 19th with Dawn Kernagis on Macro-Organisms and Water Quality and concluding on December 17th with Matt Johnson demonstrating Roller Coasters. He added that everyone was always welcome to stop in and observe one of these fun programs at either IHMC location.

Dr. Ford then informed the Board about the Fall 2016 Pensacola Evening Lecture Series that was off to an early start on August 11th with James Briscione, a celebrity chef talking about flavor, taste, the science of food … and his collaboration with IBM on Chef Watson stating that there was a great crowd of people in attendance. He mentioned that the September lecture on the 7th was Leonard Wong with his talk titled: “Lying to Ourselves: Dishonesty in the Army Profession.” He added that although this topic is worrisome, and had some local folks nervous at the outset, it was very well received. He continued by stating that we continue on October 13th with Robb Wolf discussing Darwinian Medicine, followed by Gregory Smith on November 17th discussing Microbiology-and Immunology and specifically “what we learn from a virus that reprograms our nervous system.”

In Ocala, he informed the Board of the Fall 2016 season that begins this coming Thursday evening September 29th, with Doug McGuff discussing “Strength Training for Health and Longevity” followed on October 20th with Kirk Parsley discussing “Sleep, the Most Overlooked Factor of Health and Longevity.” On November 10th, he added that Dr. Oscar Schofield, an Oceanographer with Rutgers School of Environmental and Biological Sciences, will be the guest lecturer … with the topic still to be finalized and concluding on December 15th with Mark Reifkind lecturing about maintaining energy, strength, and mobility as we age. He added that we have room for a couple more lecture sponsors both in Ocala and Pensacola so please share this information and contact him directly if anyone has individuals or businesses that are interested in being sponsors.

Turning the conversation to the new the STEM-Talk podcast series, Dr. Ford commented that this really taken off and continues to maintain a 5-star rating. He added that IHMC is about to release episode 21 featuring our own Yorick Wilks and that STEM-Talk already has well over 100K listeners.

Finally, Dr. Ford mentioned that the holiday season was upcoming and he wanted to share some upcoming dates, specifically the IHMC Pensacola Holiday Party scheduled for Friday December 9 and the Ocala Holiday Party scheduled for Friday December 16th.

In closing, Dr. Ford explained how much he appreciated everyone’s attendance at this groundbreaking event and dedication ceremony adding that this new research facility represents a significant milestone for IHMC and while there are still some new building details to work through, we are excited about moving into this new facility and that he hopes as Board members that everyone will feel as proud of this accomplishment as we do. He then thanked Chair Dalton for the opportunity to present this report.

Chair Dalton thanked Dr. Ford for an excellent report commenting that he spoke for the entire Board in saying how delighted the Board was with the progress this past year and the new building. Dr. Dalton then asked Dr. Ford and all the staff to leave the board room asking Julie to stay to take notes.

A Board discussion ensued about naming a room in the new building after Ken and Nancy Ford. After some discussion the Board unanimously agreed to name the new kitchen, Ken’s favorite room in the new facility, the “Ken and Nancy Ford Gourmet Kitchen” with all present Board members agreeing to speak with Julie about an appropriate contribution.

Dr. Ford then was asked to return and informed of the naming and the recognition from the Board of this honor in recognition of his vision and legacy. Dr. Ford thanked the board for this recognition confirming that it was indeed his favorite place in the new research facility.

Chair Dalton then asked the Board for additional items and after hearing none, he adjourned for the grand opening celebration. The meeting concluded at 10:15 am.

After a short break, the Board of Directors reconvened at 10:30 in the Robotics Lab for the Building dedication, naming and reception.

Respectfully submitted,

Julie Sheppard

Corporate Secretary