IHMC Board of Directors
Meeting Minutes
Monday, June 12, 2023
8:30 a.m. CST/9:30 a.m. EST

Roll Call	Chair Bill Dalton
Chair's Greetings	Chair Bill Dalton

Action Items

1.	Approval of March 6, 2023 Minutes	Chair Bill Dalton
2.	Discussion of IHMC Financials	Director Dick Baker
3.	Discussion/Action on 2023-2024 Meeting Dates	Chair Bill Dalton

Chief Executive Officer's Report

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

Break and Group Photo
Research Presentations
Adjournment

IHMC Chair Bill Dalton called the meeting to order at 8:30 a.m. CST. Directors in attendance included: Dick Baker, Bill Dalton, Ron Ewers, Eugene Franklin, Hal Hudson, Eric Nickelsen, Mort O'Sullivan, Jay Patel, Martha Saunders, Gordon Sprague, and Glenn Sturm. Also in attendance were Ken Ford, Morley Stone, Tim Broderick, Ronnie Armstrong, Phil Turner, Ryan Tilley, Alan Ordway, Carol Carlan and Julie Sheppard.

Dr. Dalton greeted everyone and explained that he was sorry to miss seeing everyone at dinner the previous night and he also regrated missing Chef Blake's amazing recipes, but he hoped everyone enjoyed dinner. He thanked everyone for being in attendance in person and also those who dialed in and informed the Board that there were three items to discuss followed by Dr. Ford's report.

He introduced Action Item 1 and after asking if everyone had reviewed the minutes he asked for an approval of the March 6, 2023 minutes. Director Sprague moved approval followed by Director Saunders' second. With no discussion, the motion passed unanimously.

Chair Dalton then introduced Agenda Item 2, asking Dick Baker, IHMC Chair of Finance to discuss the current IHMC financials. Director Baker discussed the financials as of April 30 stating that there was a net asset gain of $770k. He added that IHMC has enjoyed strong legislative support and that there were several big contracts in process adding that the

construction portion of the assets going up across the street were going up fast. Chair Dalton thanked Director Baker and asked for any questions or discussion on the financials. Hearing none, Chair Dalton introduced Item 3.

Dr. Dalton stated that for Agenda Item 3, there is a discussion and action item on a Meeting Schedule for 2023-2024 to include 4 scheduled meetings to be held as follows: a Teleconference 8:30 a.m. CST: Monday, September 18th, 2023; a Teleconference 8:30 a.m. CST: Monday, December 4th, 2023; a Teleconference 8:30 a.m. CST: Monday, March 4th, 2024; and concluding the fiscal year with our annual In Person Meeting: Sunday/Monday, June 9th and 10th, 2024, in Pensacola.

Director Franklin moved approval of the 2023-2024 meeting schedule which was seconded by Director Baker. Hearing no discussion, the schedule was unanimously approved.

Chair Dalton then stated he would ask Dr. Ford to provide his report. Which would be followed by a short break, a group Board photo and three research presentations.

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

Dr. Ford said good morning to the Board and thanked Chair Dalton for the opportunity to provide his report. Dr. Ford began his report by commenting on the recent legislative session stating that he was very pleased to report that we had an excellent year in Tallahassee and had a significant bump in our recurring revenue from $4.2M to $6.2M. He added that IHMC was also successful in securing $975k for a HVAC project totaling $1.4M to replace the 20+ twenty-year-old units in building 40 with a modern HVAC system. He explained that IHMC had one unfunded request for $2.3M for assistance with drainage and pervious paving in the new construction site at 41 S. Alcaniz Street. He stated that we are hopeful to come back next session for this funding to allow the construction project to be finished and the surrounding area completed and waterproofed against storm activity to the extent possible. He thanked all of the Board for their support to IHMC and asked them to join him in thanking Senator Broxson and Representative Salzman for their excellent support of IHMC this past session. He added that next year, the legislative session convenes on January 9, 2024 and runs through March 8, 2024. He stated that this means committee meetings will be held the weeks of October 9th and 16th, the weeks of November 6th and 13th and the weeks of December 4th and 11th. Dr. Ford explained that IHMC would be refiling our request for stormwater support and asked the Board to assist IHMC in letting the city, elected officials, and Senator Broxson know how important this funding will be to the overall completion and storm mitigation efforts for the facility.

Dr. Ford then shifted to the Federal Legislative Update explaining that IHMC anticipates strong bipartisan support for research and is expecting another good year in DC. He explained that now that we are past the debt limit issue, he was hopeful that congress can work toward a budget and that IHMC remained well positioned for another solid year in

DC with respect to our research initiatives.

Dr. Ford then announced several new teammates stating that Dr. Geoff Clark, joined IHMC as a Research Scientist in May 2023, working with Dr. Robert Griffin and the robotics team. He explained that Geoff previously worked at the Interactive Robotics Lab at Arizona State University where his research focused on building data pipelines to connect inertial, force, and vision data to machine learning models for fast inference and control. He shared that Geoff's Ph.D. is from Arizona State University, where he also earned his master's degree in electrical engineering and bachelor's degree in robotics engineering.

Dr. Ford also announced that Dr. Brian Jalaian was joining IHMC as a Research Scientist and as an associate professor in the Department of Intelligent Systems and Robotics at UWF. He commented that Brian was joining IHMC in a part time capacity as part of the joint UWF-IHMC PhD program in Intelligent Systems and Robotics. He remarked that Brian's research interests include machine learning, uncertainty quantification for machine learning, AI safety and security, AI assurance, optimization, and network science and that he had previously served as a technical STEM leader in AI Test & Evaluation and a machine learning research scientist in the public sector. Dr. Ford stated that Brian earned his Ph.D. in electrical engineering, and a master's degree in industrial and systems engineering, all from Virginia Tech.

Dr. Ford also announced that Benny Segovia Ruiz would be joining IHMC in mid-June as a Research Associate. He commented that Benny is an experienced exercise physiologist with a strong background in benchtop research, and clinical testing experience stating that Benny holds a Masters in Exercise Science from the University of West Florida and would be working with Dr. Marcas Bamman and his team on human performance projects.

Dr. Ford also announced that Anmol Patil joined IHMC in May 2023 as a Research Associate working with Dr. Anil Raj and Brodie Mather on coding, data science and engineering, natural language processing and other related areas. He stated that Anmol graduated from the University of Florida with a master's degree in computer and information science and holds a bachelor's degree from PES University in Bangalore, India.

Dr. Ford stated that Dr. Beomyeong Park was recently hired as a Senior Research Associate by the Robotics group. He commented that Dr. Park completed his PhD in Engineering at Seoul National University in South Korea and has most recently been working as a postdoctoral fellow on the Avatar Xprize.

Dr. Ford also stated that Kain Miller joined IHMC as a Robotics Technician/Research Associate full time in May of 2023 adding that Kain was an IHMC intern in 2022. He explained that Kain will work with Dr. Gwen Bryan and her team as a technician on the Sandia exoskeleton project.

Dr. Ford also informed the Board that in addition to the aforementioned fulltime new hires, IHMC will also host over 40 talented summer interns from all over the world, including many from the Pensacola area.

Dr. Ford then updated the Board on the Triumph funding adding that these monies continue to provide valuable resources to our growing Human Healthspan, Resilience, and Performance research. He stated that since receiving final grant approval, IHMC has utilized approximately $4.5M to purchase state of the art equipment and hire new research team members and that most of the new personnel we are hiring with these funds continue to quicky roll into new funded research projects allowing IHMC to stretch the funds further than anticipated. He mentioned that as we discussed in our March board meeting, IHMC has purchased the new NovaSeq X Plus and is awaiting delivery this month. He added that this NovaSeq X Plus is the newest innovation in genomics research and will allow for a next generation sequencing capacity to better understand genetics, genomics, epigenetics, and RNA biology, as well as targeted high-throughput proteomics, and much more. He explained that the ability to conduct this level of research in-house will reduce our dependency on other labs, and the associated subcontracting out of awarded funding, as well as place IHMC in much higher demand for collaboration on future funded research programs. He remarked that IHMC is very excited to receive this new device and begin tapping into its capabilities.

Dr. Ford also commented that IHMC has begun to stage our ordering for equipment required for the new building, including equipment for the multiple research areas that will be established in the new building. He explained that among these focus areas will be molecular biology, cell and tissue culture, microscopy imaging, mitochondrial energetics, and intervention rehabilitation. He stated that the award of Triumph funding is providing a critical foundation for our growing efforts in Healthspan, Resilience, and Performance research adding that on June 22, IHMC will be hosting the regional Triumph Gulf Coast Board meeting in our classroom in Building 40 at 10:30 a.m. adding that everyone is welcome to attend.

Dr. Ford then updated the Board on the work with American Magic, the hydrofoil sailing team for the America's Cup explaining that IHMC has now expanded its collaboration with the American Magic team. As discussed in our last board meeting, he reiterated that IHMC researchers Matt Johnson and Michael Vignati have been supporting the American Magic sailing team as they prepare for their 2024 campaign in Barcelona. He stated that the current effort has primarily focused on assessing their onboard display and interface systems adding that much was discovered during the initial assessment phase of the work, so much so that American Magic expanded both the timeline and funding for this initial assessment. He added that while the American Magic team has departed for Barcelona, we remain in discussions around the ongoing research support and anticipate a follow-on agreement to continue this effort. He concluded by saying how happy the community is that American

Magic sailing team plans to make Pensacola its headquarters and we all see the opportunity for ongoing collaboration in the future.

Dr. Ford then turned to his research update stating that he was happy to say that we continue to be successful with new research funding and that between our March meeting and today, IHMC has been awarded approximately $7M in new funding. He explained that since our last board meeting, we have submitted, 28 cost proposals and 9 whitepapers with a total value of $28M adding that he would mention several of the new funded research projects.

Dr. Ford informed the Board that Dr. Jeff Phillips has received an award of $833K from SOCOM for a project titled Haptic Tactical Gloves. He continued by stating that the current effort is a two-year proof of concept study that we hope to quickly transition through commercial partners to provide these very special gloves to the warfighters. He added that the Board would get to hear more about this glove from Jeff later this morning in one of the research presentations.

He also commented that Dr. Matt Johnson has received approximately $2.1M from the Office of Naval Research for a project called TAC Assist. In this research, he explained that good teams reliably produce good mission outcomes by adapting to their changing situations adding that individuals on the team know to adapt by awareness of relevant information and application of that information with an understanding of mission and team context. He stated that the team must communicate to ensure all team members have sufficient information for a coordinated and coherent effort while managing the cost of collaboration. In this research, he explained that IHMC will develop Collaborative AI-enabled (CAI) assistants to help teams manage interdependence and enable adaptive and resilient team performance.

Dr. Ford also mentioned that Matt Johnson also received Phase-3 funding from SOCOM for his Virtual Reality Workbench project in the amount of $550K. He reminded the Board that the goal of the virtual reality (VR) Workbench is to leverage the power of simulation and VR to de-risk new technology concepts in a fast, iterative way. He explained that failing to identify problems early in design often results in costly changes, extended delivery times or the project being shelved and adding that few design processes focus on the most critical design requirement — the mission needs of the operator. In this Phase-3 work, he explained that IHMC will embed the operator and the tools in shared space working with commercial hardware and software. He added that the Board would also get to hear more about this project from Matt in a research presentation following the business meeting this morning.

Dr. Ford then commented that Dr. Archna Bhatia, a Research Scientist in our Ocala office, has received funding from the National Institutes of Health. He explained that this work is a partnership with the University of Massachusetts Amherst and Archna's portion of the funding is $189,082 adding that the project is called Intelligent Cognitive Assistant for

Word Retrieval Support for Older Adults with Incipient Alzheimer's Disease and Related Dementias.

Dr. Ford also commented that Dr. Robert Griffin has received an additional work order in the amount of $750K from the electric car company to continue the build on previous efforts. He explained that in these efforts, IHMC and Boardwalk Robotics will further support humanoid robot efforts by modeling design variants of the Optimus robot, simulating those models through various maneuvers of interest, improving walking algorithm robustness, and improving multi-contact operation. He added that in addition, IHMC will pursue long-term research topics that are beneficial to humanoid robot efforts.

Dr. Ford than informed the Board that this week, IHMC has a DARPA sponsored workshop going on downstairs for our PROTEUS project. He explained that this evaluation event runs from today through June 15 and will evaluate how Human Machine Interfaces based on cognitive processing theory can enable single operators to perform management of complex military human machine teaming concepts. He added that this study will also evaluate situational awareness demands imposed by system design choices and that the outcome of the project will guide the development of novel HMIs that robustly support human-machine teaming. He commented that the Board may be interested in going down to the 2nd floor to take a quick look at proceedings.

Dr. Ford then turned to the facility construction on the IHMC HRP Complex explaining that the project is proceeding on schedule and within budget adding that the structural concrete frame should be completed by June 30th. He stated that we have had no significant weather delays to date and no safety issues. He added that the "DIRTT" moveable partitions, lab casework, and furniture are being ordered this month to insure on time delivery and installation and that a possible delay of the primary building 3-phase electrical transformer from Florida Power and Light (FP&L) is conceivable as after ordering the transformer with a 6-month time delay, we have been told the delay could be extended to 18 months. He explained that IHMC is working closely with Rick Byars and his team at FP&L to coordinate and review all options, including temporarily utilizing rebuilt equipment and stated that we would keep the Board posted on any developments. He also invited the Board to a topping off celebration on June 30th about noon stating that more details to follow in the next few weeks.

Dr. Ford also stated that later this week, IHMC would host its second Emeritus Recognition on June 14th, to honor retired researchers who made exceptional contributions to IHMC and to their scientific disciplines. He informed the Board that the new Emeritus researchers are Jeffrey Bradshaw, Bill Clancey, James Allen, Alberto Cañas, and Robert Hoffman who will join our first group of emeritus researchers inducted in 2018 that included Pat Hayes, Clark Glymour, Paul Feltovich, and Joe Novak. Dr. Ford also commented that former Deputy Director for Defense R&D, Tim Wright will receive the inaugural Timothy W. Wright Distinguished Leadership Award and that the IHMC inaugural Board Chair Carol

Carlan will be made an emeritus board member. He concluded by stating that this gala event will be held from 4 to 6 pm in the lobby of the Levin Center and that he would be delighted if any members of the Board could join us.
Dr. Ford then turned to Education & Outreach and began by explaining that while IHMC does not offer Evening Lectures during the summer months, the fall lineup of Evening Lectures is starting to be finalized in both Ocala and Pensacola and we should have the complete roster of speakers by our next board meeting. He explained that IHMC's podcast STEM-Talk continues to do very well with 153 episodes and more than 4 million downloads thus far.

Dr. Ford also mentioned that Science Saturdays ended in April at both locations adding that all events were well received and well attended explaining that details about the Pensacola events are provided in the Science Saturdays report which you will find on the table. He added that for Ocala, IHMC received support from Publix and Precision Sidewalk Safety Corporation and soon will be applying for grants from Lockheed Martin and the Colen Foundation. He added that the Pensacola Science Saturdays are supported by Florida Power and Light and Florida Blue.

Dr. Ford also informed the Board that Robotics Camp has started in Pensacola and is currently in its second week adding that both Pensacola camps were full within a few weeks of registration opening. He explained that there are 20 students attending in each session and that in the first session, held the week of June 5th, for rising 8th graders, there were 5 students attending with full financial support and that in the second session, for rising 9th and 10th graders which starts today, June 12th, there are 6 students attending with financial support. He added that in Ocala we have 16 signed up for the June 26th session with eight students attending for free and that in the second session, for rising 9th and 10th graders, we have only 14 signed up at this time, with 7 attending for free. He explained that that session starts July 11, so hopefully we'll get a few more for both Ocala sessions. He commented that Ocala Robotics Camp has received several grants this year including Rich Bianculli for robotics camp and for general outreach and also, of note was support from Career Source, Marion Regional Manufacturing Association and Ocala Mac Users Group. He explained that in Pensacola, sponsors include: Cox Communications, the Escambia Sheriff's Department, and Florida Blue.

Dr. Ford also mentioned that next week IHMC Robotics will be sending 6 engineers to Germany for the 2023 Dynamic Walking Conference. He explained that each IHMC participant would be presenting their work, which will range from the mechanical design of our custom humanoid robot, Nadia, to an overview on the progress on running algorithms for humanoids, which is sponsored mainly by ONR, to the development and control of our custom exoskeleton, Eva, supported by the DOE. He commented that the Dynamic Walking is a unique, multidisciplinary conference that brings together researchers from across the spectrum of dynamic locomotion, including the fields of robotics, exoskeletons, biomechanics, and even veterinary science. He added that IHMC

has hosted Dynamic Walking twice in the past in 2012 and 2018 and may again for a third time in the near future.

Dr. Ford then turned the discussion to philanthropy stating that as reported at our March meeting, IHMC held its first informative outreach event (Better Together 2023) on January 26th and those invited were current donors, influencers, and community leaders from across the region. He explained that the purpose was to provide a behind the scenes look at the institute and a total of 32 participants attended two sessions. He added that the event was well coordinated by the philanthropy team led by Carol Carlan and then asked Carol to provide a philanthropy update.

Carol Carlan thanked Dr. Ford and updated the Board on her team's philanthropy efforts to date. She discussed the success of the first two better together events and informed the Board that there would be a third date, August 1st, at 8:30 for the people who missed the first two events. She discussed the Innovation in Action Campaign and informed the Board that there was a case statement being prepared that she would share at a future meeting. She asked all the Board members to be on Board with giving or helping IHMC get donors and asked them to connect with her to discuss any ideas they might have. She briefly discussed the naming of the new facility lobby for Quint and Rishy Studer to recognize their generous gift that helped IHMC human performance with the initial seed monies. Carol then thanked Dr. Ford for the opportunity to provide her report.

Dr. Ford thanked Carol and concluded his remarks by thanking the Board for their continued support of IHMC. He added that IHMC had prepared several great research briefings scheduled this morning following his report including: Dr. Morley Stone and Dr. Tim Broderick, Dr. Jeff Phillips, and Dr. Matt Johnson. He thanked the Board again for their service to the IHMC Board and added that he looked forward seeing everyone again in person in the near future. He then thanked Dr. Dalton for the opportunity to provide his report.

Dr. Dalton thanked Dr. Ford and announced that after the break there would be three research presentations with Dr. Morley Stone and Dr. Tim Broderick doing a brief update on the A2PEX research project; Dr. Jeff Phillips discussing his research and demonstrating his new glove prototype and Dr. Matt Johnson and his team demonstrating their virtual reality research for SOCOM Workbench. He added that sometime during the morning the Board would also get the opportunity to observe a real time demonstration of the Proteus research project. With those announcements, Dr. Dalton thanked the Board and the business portion of the June 11th meeting concluded at 9:35 am.

Respectfully Submitted,

Julie Sheppard
Corporate Secretary