

IHMC Board of Directors Meeting Minutes  
Friday, January 22, 2021  
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 15, 2020 Minutes | Chair Bill Dalton   |
| 2. | Discussion on IHMC Financials     | Director Dick Baker |

Chief Executive Officer's Report

- |    |                                      |              |
|----|--------------------------------------|--------------|
| 1. | Research Update                      | Dr. Ken Ford |
| 2. | State and Federal Legislative Update | Dr. Ken Ford |
| 3. | Recruiting                           | Dr. Ken Ford |
| 4. | Education and Outreach               | Dr. Ken Ford |

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, Eric Nickelsen, Mort O'Sullivan, Jay Patel, Ray Russenberger, Martha Saunders, Gordon Sprague and Glenn Sturm. Also in attendance were Ken Ford, Bonnie Dorr, Ryan Tilley, Ronnie Armstrong, Katy Hendry, Alan Ordway, and Julie Sheppard.

Chair Dalton welcomed and thanked everyone who was there that morning both in person and to those who dialed in explaining that it has been some time getting to this meeting and that he appreciated everyone's flexibility this past year with meeting postponements and rescheduling. He added that this should be a quick meeting with two action items followed by Ken's report.

He introduced Action Item 1 being the approval of the June 15, 2020 minutes and asked for a motion to approve. Director Baker moved approval and Director Franklin seconded his motion. With no amendments or discussion, the motion passed unanimously.

Chair Dalton then introduced Discussion Item 2 concerning the IHMC Financials and he called on IHMC's Chair of Finance and Audit Dick Baker to share with the Board the most recent financial audit and the current financials. Director Baker discussed the audited financials explaining that it was a clean audit and reviewed many specialized programs at IHMC. He then compared the current financials to 2019 explaining that revenue is trending up and administrative expenses are down in his review of the five months of most recent financials. A motion to approve the audited financials was made

by Director O'Sullivan and seconded by Director Russenberger and without dissent passed unanimously.

Chair Dalton thanked the Board and asked Dr. Ford to provide his report.

Dr. Ford thanked Chair Dalton for the opportunity to provide his report. He began by thanking the Board for participating in the board meeting, mentioning both those who are here in person and those on the phone. He began by stating that it has been quite an interesting year for all of us adding that as we can all relate to it in both professional and personal lives. He offered his best wishes that everyone is doing well so far in 2021 remarking that it has been quite a while since an IHMC update.

Dr. Ford began by explaining that in addition to the pandemic, Pensacola has had to deal with several hurricane near misses and an actual hurricane landfall commenting that on September 16<sup>th</sup> – 17<sup>th</sup>, Hurricane Sally shifted eastward in its projected course, making landfall in Pensacola on Wednesday, September 16th. He informed the Board that Pensacola saw continuous wind and rain over a long period during the slow-moving storm adding that he wished to acknowledge how the IHMC staff all pitched in to secure the Pensacola facilities and equipment. Dr. Ford reported that while we escaped flooding, that there was however, wind-driven water incursion in both buildings along with tree and landscaping damage. He explained that as our deductibles are quite high, we are working with FEMA on needed repairs. He added that the generators powered essential IHMC equipment and full power was restored by that Saturday, and internet shortly thereafter. He also commented that although many Pensacola employees were also without power and sustained damage to their property, that we are thankful for their resilience, enabling IHMC to return to normal operations the following week.

Dr. Ford then turned the discussion to the State Legislature explaining that the legislature had the first Committee Week in January with another one scheduled to start this week. He explained that there will be three more Committee Weeks in February, and then the 60-day Regular Session will begin March 2 and end on April 30.

Dr. Ford explained that Governor DeSantis has communicated a variety of priorities with much of the attention will be focused on reacting to the events of 2020. He remarked that because Florida never convened a special session to address the economic downturn, they will have to craft a new budget in that light. He also mentioned that of course, additional stimulus from the federal government is in President Biden's economic plan and more funding for Florida is certainly a realistic possibility.

He continued this discussion stating that with general revenue down 6.2 percent in 2020, Florida will have to plug a \$3 billion budget hole. Adding that the Governor and lawmakers are working through a number of ideas for increasing revenue without raising taxes, which might include passing laws for online retailers to collect sales tax or expanding gambling with the Seminole tribe. He also mentioned that a tuition increase for higher education is being discussed and that across-the-board cuts are, of course, a possibility, especially as in past downturns we have seen a reluctance by lawmakers to

single out any one segment of government when making cuts.

Dr. Ford stated that it's likely the Legislature will drive the conversation with the budget and that Senator Doug Broxson has been announced as the Chair of the Senate Education Appropriations Committee and that Senator Kelli Stargel (Lakeland) is the full Appropriations Chair. She was the chair of the education appropriations subcommittee the prior two years) and that Senator Wilton Simpson (Pasco County) is Senate President. Continuing with the House, Dr. Ford stated that Chris Sprowls (Palm Harbor, in Pinellas County) is the new House Speaker and Jay Trumbull (Panama City) will chair the House Appropriations Committee and Representative Rene Plasencia (Orange County) is the Higher Education Appropriations Chair. He concluded by saying that from all accounts, this will likely be a tough legislative session.

Turning to the Federal Legislative update, Dr. Ford commented that it continues to be a series of continuing resolutions with chaos in Washington, and a new Administration taking office this week. He added that even though it has been a crazy time in Washington, he was encouraged by our progress this past year and by the strong bipartisan support for research.

Dr. Ford explained that IHMC continues to focus on advocacy for R&D programs, especially those connected to robotics, AI, and human performance and resilience. He commented that all three areas appear to be strongly supported looking forward, especially AI, and that the NSCAI has recommended large increases in AI research budget across all government research agencies.

He mentioned that in December, both the FY21 Omnibus Appropriations/COVID relief package and the National Defense Authorization Act were passed and signed into law after months of negotiations. He explained that typically, when administrations change, the incoming administration submits its President's budget request to Congress later than normal (it is normally supposed to on the first Monday in February). He stated that he is hearing that the Biden Administration is likely to submit its budget around April 20th, but that is subject to change and that final passage of FY22 Appropriations bills will depend on a number of factors, including the contentiousness of particular bills and how motivated Congress is to pass them. He finished by saying that as one can appreciate, there is a substantial degree of uncertainty going forward.

Dr. Ford then commented that a positive part of this most interesting year has been successful recruitment and that he was pleased to announce many key hires that will help IHMC stay at the top of our game. He remarked that as many already know, Dr. Marcas Bamman officially joined IHMC September 1, 2020. He explained that Marcas is an internationally recognized researcher known for his scientific contributions to the biology of human skeletal muscle and medical rehabilitation and that he is the founder and former director of the University of Alabama at Birmingham, Center for Exercise Medicine, a recognized world leader in the biological mechanisms underlying exercise-induced adaptations and their clinical utility in disease prevention, treatment and rehabilitation. Dr. Ford explained that Marcas' research in understanding the molecular responses to

exercise and how they relate to health and performance is highly valued by the National Institutes of Health, the DOD, NASA and other agencies. He stated that Dr. Bamman joins the IHMC human performance and resilience research team as a Senior Research Scientist and that a number of Marcas' team at UAB would be interested in relocating to Pensacola and that one of these people, Research Scientist Dr. Kaleen Lavin has already joined the IHMC team. Dr. Ford mentioned that Dr. Kaleen Lavin received her Ph.D. in Human Bioenergetics from Ball State University, in Muncie, IN and that she has acquired numerous wet- and dry- laboratory techniques in molecular biology and biochemistry, enabling collection of high-throughput data and rich phenotyping. He explained that Kaleen joins IHMC as a Research Scientist working with Dr. Marcas Bamman and the IHMC human performance and resilience team on a variety of human performance research projects, including the PEERLESS project.

Dr. Ford stated that another important addition to the human performance team is Dr. Gregory Kovacs. He explained that Greg is the Chief Medical Officer for Triple Ring Technologies, a medical device and biotechnology co-development company and that prior to this, Greg was CTO at SRI and before that he was president of SRI Biosciences. He mentioned that Greg has deep expertise in academics, entrepreneurship and government service and that in the 25 years before joining SRI, Greg was on the faculty of Stanford University, where he was a professor of electrical engineering (now emeritus), and by courtesy, medicine. He commented that Greg Kovacs co-founded the Bioengineering Department at Stanford in 2002 and that his areas of research span a wide array of biomedical topics, including the development of non-invasive instrumentation for biomedical, aerospace, and biotechnology applications. Dr. Ford stated that Dr. Kovacs has made significant contributions while serving at DARPA as the Director of their Microelectronics Technology Office and that he will join IHMC as a Visiting Senior Research Scientist appointment to collaborate with IHMC researchers in a variety of research projects.

Dr. Ford commented about another key hire, Dr. Art Finch, who joins IHMC as a part time Research Scientist working primarily with Timothy Broderick on the PEERLESS project. He explained that Art is recently retired from the Army Special Operations Command and has transitioned to IHMC as a researcher, adding that Art is Psychologist with expertise in assessment and selection, leadership, and maximizing individual and team performance. Most recently, Dr. Ford mentioned, Art directed a multi-disciplinary team of 90 behavioral scientists consisting of active duty, civilians and contractors adding that he will be a great asset for IHMC's human performance work.

Dr. Ford also mentioned that Tyler McClure joins IHMC as a Research Associate working with Drs. Jeff Phillips and Michelle Sciarini on the HDBT and HVMN projects adding that Tyler has a Master's in Integrative Human Physiology from Central Washington University and a BS in Kinesiology from Oregon State. He continued by adding that Vanessa Oviedo joins IHMC as a Research Associate working at the Defense Language Institute Foreign Language Center in Monterey, CA, with Dr. Toshiya Miyatsu on the LEAP and PEERLESS research projects explaining that Vanessa is a PhD student in Cognitive psychology at UC Santa Cruz. Continuing, Dr. Ford added that Ryan

McCourt recently completed his undergraduate studies in computer science at UWF and joins Matt Johnson's team as a Research Associate. Another hire, Dr. Ford added, is Vishnu Aishwaryan who recently completed his Master's Degree in Mechanical Engineering at Worcester Polytechnic Institute and who joined IHMC in October as Research Associate working with Dr. Robert Griffin on various exoskeleton and robotics research projects. Dr. Ford stated that Alexis Maslyczyk joins IHMC as a Research Associate working with the IHMC robotics group as an electrical engineer on the Sandia DOE and SquadBot projects adding that Alexis has a Master's in Electrical Engineering, Robotics and Automation from the Ecole Institute in France and experience as both a software and hardware designer in Canada before coming to IHMC. Another new hire Dr. Ford mentioned is Denim Patel who joins IHMC as a Research Associate working with Drs. Robert Griffin and Matt Johnson on autonomous navigation research and other IHMC related projects adding that Denim has a Master's in Robotics Engineering from Worcester Polytechnic Institute and an undergraduate degree in mechanical engineering.

Dr. Ford concluded by stating that this is an excellent group of new hires and that of interest is as the pandemic continues, we are getting lots of inquiries from University faculty and administrators looking for different opportunities and that he expects to have some great news this spring on more new people.

As we have discussed many times, Dr. Ford commented that IHMC is growing its research efforts in the human performance space. He explained that to assist with this, IHMC has submitted a proposal to Triumph Gulf Coast for grant funding that will help support the purchase of equipment and hiring additional personnel adding that the nature of much of the current and targeted human performance research requires very specific and expensive equipment that IHMC does not currently possess. He stated that IHMC has requested just over \$6 million from TRIUMPH Gulf Coast with approximately half going to equipment purchases and the remaining helping to hire new colleagues and that on Thursday December 17th, IHMC received preliminary approval to move forward on this project. He explained that the next hurdle is negotiating a term sheet for Triumph Board approval and that we hope to be on the February agenda for that approval process. Dr. Ford thanked all the Board members who helped garner support with TRIUMPH Board members for this proposal.

Turning to his research update, Dr. Ford stated that IHMC's research team has done a phenomenal job during COVID 19 and continues to push hard with proposal efforts adding that in calendar year 2020, IHMC research team members submitted over 100 proposals, and won a nice percentage of them. He explained that we continue to be successful with new research funding and between our June meeting and today, we've been contracted for over \$4.1 million in new research funding and have over \$3.9 million of sponsored research projects pending or in the negotiation phase. He added that we are especially proud of this effort particularly in light of the unique landscape over the last 10 months with the pandemic and work at home and closures with the various entities involved and that he would now mention several of the new funded projects.

He began by announcing that Dr. Peter Pirolli has received a new IARPA research

contract award titled “High-Fidelity Population-Level Forecasting Models of Human Psychology and Behavior in Response to Non-pharmaceutical Interventions and (Dis)Information Campaigns”, also known as Predictive Intelligence for Tracking Transmission. He explained that the focus of this research is on the prediction of behavior and attitudes that are assumed to influence the transmission of infectious disease (e.g., COVID-19) adding that Dr. Pirolli and his team will develop a proof-of-concept and demonstration of a psychologically valid agent-based pipeline that ingests available data about the ongoing dynamics, world events, and polling data for a specified region, and predicts regional attitudes and behaviors.

Dr. Ford then reminded the Board that as discussed briefly in our previous board meeting as a pending proposal effort, Dr. Robert Griffin has now been awarded funding in collaboration with the DOE’s Sandia National Laboratory. He announced that this proposal was titled “Wearable Robotics to Enhance Worker Safety” adding that this work aims to address the middle to long term ergonomic and safety challenges that face Department of Energy – Environmental Management workers. He stated that for example, by providing wearable robotic assistive devices to the current workforce, the weight of this heavy equipment and PPE can be offloaded from the user, allowing workers to spend more time in the field, work more productively, and experience reduced physical exhaustion risk of long-term musculoskeletal injuries.

Dr, Ford also announced that Dr. Brent Venable has been awarded NSF funding for research titled “Modeling and Learning Ethical Principles for Embedding into Group Decision Support Systems” adding that the long-term goal of this project is to establish mathematical and machine learning foundations for embedding ethical guidelines in AI for group decision-making systems.

Continuing with his research report, Dr. Ford explained that Dr. Jeff Phillips has been awarded funding from the Naval Aerospace Medical Research Laboratory for his research titled “In Cockpit Sensor Fusion Using a Machine Vision Approach”. He commented that this research is aimed at addressing the operational safety threat associated with Unexplained Physiological Events and that toward this end, the Navy and Air Force have developed sensors to integrate into tactical aviation that are designed to detect life-support system malfunctions and changes in the functional state of the pilot. He commented that however, in dynamic-aircraft environments numerous complexities exist that prevent capturing the total contributions to pilot performance from the aircraft and the environment adding that IHMC will develop a prototype hardware and software system for automated processing of Unexplained Physiological Event multivariate data.

Dr. Ford remarked that Dr. Bonnie Dorr has spearheaded a new partnership with University of Maryland’s Applied Research Laboratory for Intelligence and Security explaining that Bonnie proposed and was awarded a program titled “Languaculture Virtual Assistant”. He commented that this project aims to help human experts respond appropriately to strategic communication campaigns across languacultural bridges and that the virtual assistant will provide the human expert with knowledge that facilitates a response to non-US influence campaigns. He added that future projects will build on

LVA, with the goal of seeking out longer-term collaboration.

Dr. Ford then mentioned two interesting and substantial projects in negotiation one being Dr. Timothy Broderick's ONR award pending titled "Evaluating Potential Benefits of Intranasal Oxytocin on Undersea Operator Training and Performance". He explained that OT has a wide range of actions both locally in the brain and peripherally in the body including skeletal muscle. NSW operators are exposed to a variety of extreme environmental conditions and intense physical demands and biotechnologies that could mitigate the effects of cold as well as support physical recovery represent a significant unmet need for the NSW operational community. The second he commented is Dr. Jeff Phillips' pending award from the Air Force titled "Evaluation of the U.S. Air Force Performance Assessment Tool to Detect the Cognitive Performance Effects of Operator Dehydration". Dr. Ford added that IHMC will alter PAT programming to achieve adaptations of the PAT to increase its sensitivity to the performance effects of environmental stressors and to facilitate the collection of valid oculometric indices with PAT. IHMC will then conduct a test-retest reliability and content validity study on the new components of PAT to ensure that the PAT can detect changes in cognitive performance associated with dehydration at varying levels of cognitive workload.

Dr. Ford added that as one can see, this has been a busy year for new proposals and we are confident we will complete contract negotiations on several of these in the first quarter of 2021.

Dr. Ford then turned the discussion to workshops and competitions stating that on August 4<sup>th</sup> – 7<sup>th</sup>, 2020, IHMC coordinated and hosted the USSOCOM Performance Nutrition Webinar Summit. He explained that originally, we were scheduled to send our administrative and technology team to New York. However, due to the pandemic this event was made virtual and the IHMC team was asked to coordinate all the details and IHMC staff coordinated 10 speakers (one from Australia) for an audience of approximately 200 nutritionists and scientists through a Webinar platform. He commented that this was the first time IHMC hosted a webinar this size and the coordinated efforts between IHMC and USSOCOM team were seamless, and we all had a lot of fun learning the process.

He continued mentioning that one of the previous awards we discussed was the grant for the first phase of the Toyota Mobility Challenge. Dr. Ford explained that as one of the five finalists, Dr. Robert Griffin and his team received a grant of \$500,000 to further develop their concept and the results were announced last month. Although we did not win the competition, the publicity and experience was exciting. He stated that IHMC's newest Exoskeleton, Quix, improves upon many of the mobility, safety, and user interface issues that hinder other powered exoskeletons designed for paraplegic mobility and with such advancements like a passive locking brake system, easy interface adjustments, and hot swappable batteries, Quix supplies the user with a robust/reliable platform.

Dr. Ford stated that also of note relative to our powered exoskeleton, is the recent 2020

Cyathlon competition in which IHMC took home 4th place and that our pilot, Mark Daniels, trained very hard for this competition and the research team did a fantastic job. He added that due to Covid 19, the in-person competition in Zurich was moved to remote on-site so we set up the obstacle course in our robot lab downstairs. He explained that the team was very excited and looks forward to the next opportunity to compete and he added that future software development on the device will concentrate on performance optimization and naturalistic gait development.

In more local news, Dr. Ford mentioned that in October 2020 - Matt Johnson held another Drone training with the Pensacola Police Department, and IHMC had approximately 10 officers in training. He continued by adding that this project continues to be very interesting and achieving excellent results in technology assisted police work and we fully expect that with Chip Simmons coming into office that the County will also be knocking on our door.

Turning to building updates, Dr. Ford informed the Board that IHMC is exploring the possibility of working with Space Florida to finance and build a new IHMC human performance lab on the Garden and Alcaniz Street Property. He explained that Space Florida has been to IHMC several times over the summer and early fall and they have started on a scope of services due diligence phase to hire a firm to describe and estimate the cost of a new facility in order to determine if it is cost feasible to finance and build this facility. He remarked that ten architectural firms responded by the November 20<sup>th</sup> deadline to the Request for Qualifications and that each member of the review committee scored the 10 applications. Dr. Marcas Bamman was IHMC's representative on this review committee. He informed the Board that Space Florida awarded the scope of services contract to Caldwell and Associates who will be developing the preliminary design and feasibility analysis and explained that we would keep everyone posted on this exciting project as it develops and we hope to have the initial design and feasibility scope finalized by late June 2021.

Turning to Education and Outreach, Dr. Ford commented that since COVID, we had to cancel most visits and large meetings including the fall evening lectures and we were looking forward to getting back on track with our Lecture Series this spring. However, with the recent spike in Coronavirus cases, we have once again postponed the evening lecture season in Pensacola and Ocala to Fall of 2021. He stated that IHMC will continue to produce the podcast series and that we hope that you will enjoy some of the upcoming interviews on STEM-Talk. He explained that robotics camp took place as usual in Ocala with COVID precautions. There were no reports of illness from parents of any campers, either before or after camp with one volunteer cancelling because she had been exposed at another camp the previous week, but who later tested negative and was able to join the second week of robotics camp. Dr. Ford explained that we made a few changes to the camp activities/schedule because of COVID, and these turned out to be improvements to carry forward for next year. He added that unfortunately, the Pensacola camp was cancelled at the last minute as the instructor cancelled due to COVID concerns on the part of his principal.



Continuing his report, Dr. Ford informed the Board that we have held small Science Saturdays in both Ocala and Pensacola with appropriate distancing and safety measures and have limited attendance in each session to 18 youth and put in place some new safety procedures and, so far these have been successful and enjoyed by all. He noted that of particular note was the Monarch Butterfly session in October in Ocala where a butterfly actually hatched during the class and that this session will be held in Pensacola in the future and we hope for a repeat performance. He explained that we held the last Science Saturday for the fall in both Ocala and Pensacola this past Saturday, December 12<sup>th</sup>.

Dr. Ford also commented that IHMC made the difficult decisions not to hold the annual Holiday parties in Ocala and Pensacola. He added that the Ocala employees opted not to have any type of event and in Pensacola on Thursday, December 17<sup>th</sup> from 3:30 p.m. to 5:30 p.m. we hosted a small employee social which was well attended.

Dr. Ford then announced that it is with great pleasure that he informs the Board that I tell you that our very own Dr. Bonnie Dorr has been named a fellow of the Association of Computing Machinery announcing that she is one of 95 fellows ACM is honoring this year for their contributions in computing and information technologies. He added that Bonnie, who is an associate director at our Ocala branch and one of our senior research scientists, is also one of the nation's leaders in the field of natural-language processing stating that this is a great honor for Bonnie and she has had such a distinguished career extending from cyber security to social computing to artificial intelligence. He concluded by commenting that it is great to see her recognized for the important work she does and that he knows the Board will join him in congratulating her. The ACM Fellows program recognizes the top one percent of the association's worldwide membership.

Concluding his comments, Dr. Ford stated that he looks forward to seeing everyone again in person in the near future and he thanked the Board for their continued support of IHMC. He then informed Chair Dalton that this concluded his report.

Chair Dalton thanked Dr. Ford for an excellent report adding that the Board always learns something listening to these reports. He congratulated Dr. Bonnie Dorr and welcomed the new researchers to IHMC. Chair Dalton then asked the Board if there were any questions or any additional items. A brief discussion ensued about the post Covid and its impact on meetings being held virtual and human subject experiments being conducted differently in the future.

Chair Dalton adjourned the Board meeting at 9:35 a.m. central time.

Respectfully submitted

Julie Sheppard  
Corporate Secretary

