

Chair Dalton welcomed and thanked everyone who was there that morning both in person and to those who dialed in. He added that this should be a quick meeting with two action items followed by Dr. Ford's report.

Chair Dalton then introduced Action Item 1 asking for approval of the April 19, 2021 Minutes. Director Carlan made a motion to approve, and this was seconded by Director Reeves. Hearing no objections, the January 22, 2021 minutes were passed unanimously.

Chair Dalton then introduced Agenda Item 2, asking Chair of Finance and Audit, Dick Baker, to discuss the current IHMC financials. Director Baker discussed the financials noting that the legislative appropriation funding had decreased but that there was an increase on contract and grant revenue. Director Baker noted no problem areas of concern and Chair Dalton thanked Director Baker for his report and asked the Board if anyone had questions for Director Baker or Ronnie Armstrong, CFO. Hearing none, Chair Dalton moved to Agenda Item 3.

Chair Dalton then proposed a meeting schedule for 2021 and 2022 consisting of three teleconference meetings to be held at 8:30 central time on Monday September 20, 2021, Monday December 13, 2021, and Monday March 7, 2022. He also proposed an in-person meeting on Sunday and Monday, June 12th and 13th in Pensacola, Florida. Director Carlan moved approval and was seconded by Chair Dalton and hearing no objection, the 2021-2022 proposed meeting schedule was adopted.

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

Dr. Ford thanked Chair Dalton and wished the Directors good morning stating that it was wonderful to see so many of you in person and he hoped everyone enjoyed the annual dinner last night. He mentioned that although we do live in interesting times, the IHMC team has, as you will hear, continued to excel in so many ways and he hoped that all the board members were doing well so far in 2021.

Dr. Ford began his comments with a discussion of the state legislative session explaining that we are pleased to report that the Governor signed the state budget and IHMC ended the session with \$4 million in recurring revenues. He continued b stating that as most Director's know, we have been struggling to get back to this former level of recurring dollars since 2017 and

we could not be more pleased with the efforts from our Tallahassee team. He asked that all the Directors thank Senator Broxson, Senator Baxley, Representative Andrade and others that have been influential in helping us restore the recurring funding revenue stream. He explained that it is essential to an organization like IHMC to have some discretionary dollars to fund new initiatives and this is what we will be able to do this next year with this additional funding. He thanked everyone here who reached out on behalf of IHMC this session.

Dr. Ford then turned to the federal discussion explaining that President Joe Biden released his fiscal year 2022 budget request to Congress on Friday, May 28th just ahead of Memorial Day weekend, the first formal budget of his presidency. He stated that Biden's budget incorporates his two signature domestic proposals, the American Families Plan and the American Jobs Plan, neither of which has been seriously debated by Congress yet and that the budgets illustrate how different Biden's priorities are from Trump's. For example, Dr. Ford explained, it requests an increase of 41% for the Department of Education over last year, plus 23% more for the Department of Health and Human Services, and 22% more for the Environmental Protection Agency. However, he explained funding for the Department of Homeland Security, would decrease by a tenth of a percent and that another Trump priority, the Department of Defense, would see an increase in funding of just 2%.

Continuing, Dr. Ford mentioned that the topline budget request for 2022 is \$6 trillion, but of this, only \$300 billion is new spending requested for next year and instead, as in every presidential budget, most of the budget will be spent on programs the government is obligated by law to fund, such as Medicare, Social Security, and interest on the national debt. He ended by stating that all told, around \$1.5 trillion was requested for discretionary items in FY 2022, which includes the funding of all federal agencies. He remarked that IHMC remains optimistically confident about 2022 and the Federal R&D opportunities available to IHMC, and that he looks forward to sharing more on this topic at the fall meeting.

Turning to his research report, Dr. Ford stated that the research team is continuing to do a phenomenal job during unusual times and continues to push hard with proposal efforts. He explained that IHMC continues to be successful with new research funding and in the last 8 weeks since our April 19th meeting and today, we have contracted for nearly \$2 million in new

research funding and have over \$3.2 million of sponsored research projects pending or in the negotiation phase stating that he would briefly discuss several of the new funded projects.

Dr. Ford then mentioned a project led by Dr. Matt Johnson, with the goal of the \$1.82 million *Virtual Design Reality Workbench* project being to leverage the power of simulation and virtual reality 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. He remarked that the VR Design Workbench provides a framework to enable operator-centric design and evaluation of new concepts adding that this project is funded by SOCOM and uses the IDIQ contract vehicle managed by USF.

Dr. Ford then mentioned several of the \$3.2 million of new research projects have been selected for award but are still in contracting or negotiations commenting on Dr. Anil Raj's NASA project of \$1,200,000 entitled *Shared-space Tactile-audio Augmented VR (STAVR)*. He commented that astronauts on exploration class (and other long duration) missions will live for multiple months to years confined in a limited livable volume and face-to-face interactions with only their crew mates. He explained that due to this, refresher training and simulation for planned mission tasks and just-in-time training for unanticipated events will be necessary to maintain and acquire skills for a successful mission in the deep space isolated, confined, and extreme (ICE) environment. He added that this envisioned system will provide an integrated immersive visual, tactile, and auditory experience.

Discussing another project, Dr. Ford mentioned that Dr. Arash Mahyari, through Pfizer and the American Cancer Society, received a \$93,408 award "Participatory Design of An Artificial Intelligent Digital Assistant to Improve Shared Decision Making for African American Men." Dr. Ford commented that African American men are at high risk for prostate cancer adding that the overall goal of this project is to improve shared decision making for African American men who have been diagnosed with localized low risk prostate cancer. He explained that the project will use a community-based participatory research methodology to design and develop an artificial intelligent conversational treatment decision aid.

Dr. Ford also mentioned a project led by Larry Bunch involving the DoD Test Resources Management Center who will provide \$1.9 million for the

project, “Advanced Visualization Techniques: Data Observatory.” He explained that IHMC’s work will empower Operational Test and Evaluation personnel with unprecedented interactive three-dimensional visualization technologies for high-performance multivariate data analysis.

Dr. Ford then turned to Tampa advising the Board that Chair Dalton has been very helpful these past several years in connecting IHMC with several ongoing initiatives in the Tampa region and explaining that just this past week, he has been in Tampa meeting potential collaborators. He added that additionally, Morley and Julie were both invited and traveled in May to a USF-Community-Military Partnership Consortium looking to grow an innovation center close to USF. He continued by stating that as many may recall, IHMC is working on an exciting new research project through a USF Consortium with SOCOM so we are definitely expanding our relationships with the Tampa region on many fronts.

Turning to audits, Dr. Ford explained that this past fall and spring, IHMC was selected for a federal equal opportunity audit focused on compliance with veteran hiring initiatives. He stated that although one never knows how these will pan out due to a myriad of complicated federal rules and regulations, he was pleased to inform the Board that IHMC was notified in late May that we passed this audit with flying colors. Dr. Ford thanked Julie, Ronnie and the entire administrative team for their efforts on this review.

Continuing, Dr. Ford stated that IHMC’s independent federal audit for 2020-21 will be starting up again as our fiscal year closes on June 30th. He explained that we are hopeful by the fall board meeting that we have a more complete financial picture to share as this past year has been an anomaly, but he stated that he was confident that we are having a great year with proposal acceptances and awards, but many of the awards are taking a much longer than anticipated road to execution and billing start dates. He remarked that IHMC hopes that this is not the new normal and a result of many federal employees still working remote.

Turning to a discussion of Blue Sky meetings, Dr. Ford informed the Board that IHMC will be hosting another Blue Sky meeting in mid-July explaining that the prevention and treatment of TBI remains a significant challenge in both sport and in the military community. He explained that the theme for this meeting will be: *Left of Bang Prophylactic Neuroprotection and Unconventional Neurologic Assessment of TBI* adding that the fact-finding

and ideation meeting will bring together leading subject matter experts carefully curated from government, industry and academia representing the best thinking on methods for unconventional neurologic assessment of TBI as well as those focused on methods for prophylactic neuroprotection.

Dr. Ford then updated the Board on the PEERLESS program stating that this project continues to be successful as it pushes for additional data collection. He added that in May, the PEERLESS team made its 3rd trip to San Antonio, TX to work with the Airforce's Tactical Air Control Party (TACP) selection process explaining that TACP specialists work with Army and Marine units on the frontline with the responsibility of calling in an air strike on the right target at just the right time. He commented that these highly trained experts go through intense physical, mental, and technical training in order to withstand the demanding conditions of battle and provide their team with the firepower they need for continued success on the battlefield. He stated that during the TACPs grueling selection process, the IHMC PEERLESS team conducts biospecimen (blood, urine, saliva) data collection as well as a few other non-invasive data points and that once the selection process is complete, the PEERLESS team conducts "PEERLESS Day" where the candidates are put through a series of phenotypic, biospecimen, and cognitive behavioral assessments. He continued by explaining that these efforts provide significant data points to further the aims of the PEERLESS program adding that the board would hear more about this program when Dr. Tim Broderick briefs us later in the meeting.

Dr. Ford then turned to a discussion of facilities stating that IHMC is moving forward with Space Florida to determine the financial feasibility of building a new 4 story building largely focused on Human Performance, Healthspan, and Resilience. He mentioned that the initial set of designs involving scope and layout and predicted cost will be finalized June 17th adding that Space Florida has also vetted the project with their Board of Directors and received approval to proceed with the planning for this project. He stated that the next steps will involve securing financing and selecting the Architectural firm and Construction management firm to design and build the new facility. He commented that this is super exciting and timely as you will hear later from Tim Broderick and Marc Bamman about some of our exciting human performance projects. He explained that at the current time, we are subbing out much of the biomedical components of our research due to the lack of sophisticated laboratory equipment and personnel but that this new facility, new equipment, and new hires will allow us on

future projects to retain much of that research here at IHMC. He explained that if things continue to move forward, we anticipate a completion date in 2023.

Continuing with facilities, Dr. Ford commented that at the same time, IHMC is also looking at renovating parts of 40 S. Alcaniz St. He explained that as some Board members may recall, IHMC moved into this facility in 1998-99 and except for repairs from Ivan and the great flood of 2014, this building has not been renovated. He commented that it is past time, and we are currently exploring renovating the lower north wing and the former executive suite to facilitate research space and offices adding that it is possible by the fall or winter meeting that we can tour you through some newly refurbished spaces.

Turning to Triumph, Dr. Ford stated that IHMC is continuing to utilize Triumph Grant Funds to purchase equipment needed to grow the human performance and resilience program. He explained that purchases include high-end equipment like DEXA scanners, metabolic carts, numerous centrifuges, and other laboratory equipment. As to date, IHMC has purchased over \$400,000 worth of equipment and will continue to make equipment purchases to provide the tools needed to drive cutting edge human performance and resilience research. In addition, he commented, IHMC has now hired the following new teammates leveraging the Triumph grant funds: one research scientist, one senior research associate, one research associate and one research coordinator. He stated that overall, we are off to an excellent start and will be hiring more people as we transition these new hires to grant funded projects in the future.

Dr. Ford then introduced several new team members beginning with Ryan McCourt who recently joined IHMC in a full-time capacity as a Research Associate working with Dr. Matthew Johnson. He stated that Ryan is currently pursuing a B.S. degree in Computer Science at the University of West Florida (UWF) adding that during his time at UWF, Ryan was president of the UWF Chapter of the ACM as well as the UWF Association for Information Technology Professionals.

Dr. Ford then announced that Dr. Jeremy McAdams will be joining IHMC in August as a Research Scientist stating that Dr. McAdams will work with the Human Performance and Resiliency team supporting programs like PEERLESS and other DoD funded programs. He explained that Dr.

McAdams comes to us from the University of Alabama at Birmingham (UAB) where he served as a postdoctoral fellow in the Department of Cell, Developmental and Integrative Biology. He added that Jeremy has worked on studies related to Parkinson's disease, mental disorders, and osteopathic diseases such as osteoarthritis commenting that Dr. McAdams looks forward to joining IHMC and further investigating the physical and biological responses to exercise and stressful environments to help improve recovery, training, and health of individuals. Dr. Ford added that Jeremy has a PhD in Kinesiology and that IHMC looks forward to Jeremy's arrival in August.

Dr. Ford also announced that Steven "Craig" Tuggle also joined IHMC from UAB and began work a couple weeks ago as a Senior Research Associate working as a lab and project manager on a variety of human performance optimization research projects under the direction and mentorship of Dr. Marcus Bamman. He stated that Craig has helped lead, train, and implement many research protocols from various funding agencies such as the NIH, VA, DoD, and DARPA and will play an important role in the expansion of our programs in Human Performance and Resilience.

Dr. Ford also announced that Robert Higgins joins IHMC as a Research Associate working with Dr. Marcus Bamman on clinical research for several of the human performance research projects. He added that Robert received his M.S. in Cellular Biology from East Carolina University with additional Board Certification in Aerospace Physiology from the Council of the Aerospace Medical Association. He explained that Robert is a retired Navy Captain and that prior to joining IHMC, he was Director of Operations for the National Defense University in Washington, DC.

Dr. Ford also mentioned that Amy Rose has been promoted from staff assistant/receptionist at IHMC to a Research Coordinator adding that Amy is detail oriented and will put these skills to work helping research teams coordinate their activities. He explained that Amy is a military spouse and appreciates the complexities of working with military research cohorts.

Dr. Ford commented that it is also an exciting time of year for IHMC as interns are arriving daily at all academic levels from high school to graduate school. He explained that we continue to be quite selective and have once again assembled a stellar group adding that these interns will work through the summer with Research Scientists on their funded projects. He mentioned that after this past year of COVID, it's great to see the labs and collaboration

spaces full. He added that currently we have about 40 interns that have arrived including two students from the Czech Republic who travelled to Spain and quarantined there to get to the U.S.

Dr. Ford continued his report stating that the Ocala location is slowly returning to normal and preparing for the upcoming summer Robotics Camp as well as Science Saturdays, a Fall Evening Lecture season, resuming afternoon lectures, among other things. He mentioned that the folks in Ocala have also used this down time to schedule some maintenance in preparation for the upcoming hurricane season; including tree-trimming, gutter clean outs, and landscaping clean-up.

Dr. Ford then turned to outreach stating that STEM-Talk continues to be very successful adding that currently we are closing in on 3 million downloads of our shows. He mentioned that Episode 123 was recently released and features Dr. Steve Chien talking about AI, Mars rovers, and the possibility of intelligent alien life. He added that Dr. Chien is a JPL Fellow, Senior Research Scientist, and Technical Group Supervisor of the Artificial Intelligence Group and in the Mission Planning and Execution Section at the Jet Propulsion Laboratory, California Institute of Technology.

As many may recall, Dr. Ford commented, Science Saturdays were cancelled in both Pensacola and Ocala in Spring 2021 and instead, we offered three downloadable, hands-on science lessons for parents and teachers. He explained that these were well received and used by teachers and home school parents, but in-person Science Saturdays will resume in September, and everyone is excited about that adding that IHMC has recent notifications of Ocala Science Saturday sponsorships from Lockheed Martin (\$8,000) and the Colen Foundation (\$6,500). Both grants also included funds for robotics camp, for a total of \$10,000 from Lockheed Martin and \$7,500 from the Colen Foundation.

Dr. Ford commented that Robotics Camp Pensacola has begun with camps the weeks of June 7th and June 14th with both sessions full. He mentioned that sponsorship funding in Pensacola includes Pensacola State College (\$3,200); Escambia County Sheriff's office (\$1,000); Barnes Insurance (\$1,000); and Florida Blue (\$1,000). Dr. Ford added that Pensacola State College is sending 14 students to camp from their middle school talent search program and has grant funding to pay \$200 per student. Continuing on, he explained that in Ocala, robotics camp will take place the weeks of

July 12th and July 19th. He added that currently, the first session was full but the second still has space available. He remarked that new this year in Ocala, the second session (for rising 8th and 9th graders) will be taught in the Python programming language instead of the visual LEGO language adding that if this goes well, we'll hopefully be able to do the same in Pensacola next year. He mentioned that robotics camp sponsorships in Ocala are as follows: Career Source \$3,000; Renasant bank \$1,000; Marion Regional Manufacturer's Association \$1,000; Lockheed Martin \$2,000; and the Colen Foundation \$1,000.

In other news, Dr. Ford announced that on July 23rd we are collaborating with UWF to host a lecture by Eric Silagy for a community presentation. He informed the Board that Eric Silagy is President and CEO of Florida Power & Light Company (FPL), a subsidiary of NextEra Energy, Inc. Eric is also a Governor DeSantis appointment to the Board of Governors, to the State University System of Florida, and we are excited to have him visit.

Dr. Ford also explained that we were currently coordinating IHMC Evening Lectures for the fall in both Pensacola and Ocala and we will provide updates at our next Board meeting as speakers and dates are finalized. Dr. Ford also mentioned that the new IHMC Newsletter was on the table and online and added that he hoped everyone would enjoy it!

Dr. Ford then thanked everyone on the wonderful board members for attending the Annual Board Meeting and for their continued support of IHMC. He then informed Chair Dalton that this wrapped up his report.

Chair Dalton thanked Dr. Ford for another excellent report and asked the Board for questions or discussions.

Hearing none, Chair Dalton then moved the agenda forward for research presentations.

Dr. Morley Stone introduced himself to the Board explaining his background and anticipated role at IHMC. The Board welcomed Dr. Stone to IHMC.

Dr. Tim Broderick then gave a presentation on the PEERLESS project explaining the research protocol, partners and preliminary results. The Board congratulated Dr. Broderick on his work.

Dr. Marcos Bamman then gave a short presentation on his research area in human performance, briefly discussed several of his research projects and new team members who were joining IHMC.

Chair Dalton thanked all present and on the phone for their participation, commended IHMC on an excellent meeting, added his wishes for everyone to stay healthy and to have a great week and adjourned the Board meeting at 11:25 a.m. central time.

Respectfully submitted

Julie Sheppard
Corporate Secretary