Roll Call
Chair Bill Dalton

Chair’s Greetings
Chair Bill Dalton

Action Items
1. Welcome to new Director Jay Patel  
Chair Bill Dalton
2. Approval of December 4, 2017 Minutes  
Chair Bill Dalton
3. Update on Financials  
Director Dick Baker

Chief Executive Officer’s Report
1. Research Update  
Dr. Ken Ford
2. State and Federal Legislative Updates  
Dr. Ken Ford
3. Facilities Update  
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, Jon Mills, Mort O’Sullivan, Jay Patel, Alain Rappaport, Jim Reeves, Martha Saunders, and Gordon Sprague. Also in attendance were Ken Ford, Ronnie Armstrong, Bonnie Dorr, 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. He remarked that he would like to move directly into our meeting this morning to discuss the three items on the agenda followed by Dr. Ford’s report.

Chair Dalton began the meeting by introducing action Item 1, the introduction of a new Board member and stated how pleased he was to welcome Jay Patel to the IHMC Board. Chair Dalton informed the Board that Jay Patel is a real estate developer who manages multiple franchised hotels and various related assets in the panhandle area of the Gulf Coast and nationwide. He stated that Jay is an early member of the Asian American Hotel Owners Association (AAHOA) and for over three decades he and his network have brought thousands of Asian Hoteliers together, remarking that currently these Asian associations have evolved into the world’s largest hotel association, with 22,000 hotels and 16,000 members. He mentioned that Jay also co-founded the National Association of Black Hotel Owners, Operators and Developers, called NABHOOD, that has successfully helped African Americans to acquire more than eight hundred Hotels and become a major player of the hospitality industry.
Chair Dalton remarked that Jay also is the author of the book, *Franchising Is It Fair? Or How to Negotiate an Equitable Franchise Agreement!*, and he is a recognized expert in the hospitality franchised industry. He stated that Jay has been recognized and presented with three Honorary Doctorate degrees for his accomplishments, in education, theology and the hospitality industry, and remarking that over the years, Jay has been the recipient of multiple hospitality industry awards from various national organizations including the prestigious Outstanding Service Award, The Award of Excellence, The Spirit Award, The Strategic Partnership Award, The Chairman’s Award and, most recently, The Hispanic Industry Leadership Award from the International Association of Hispanic Meeting Professionals.

He added that currently Jay is involved in efforts facilitating the transition of the hospitality industry to the 21st century by testing, promoting and using various blockchain technologies through smart contracts, distributed reservation systems, payments, evaluation and smart hotel monitoring. This model is also meant to digitally monetize hotels’ most underperforming assets. Chair Dalton informed the Board that in 2010 and again in 2016, Governor Scott appointed Jay to the Board of Trustees of the University of West Florida. He continued by adding that this past fall, Jay was appointed to the State University System Board of Governors and today he joins the IHMC as the State University System of Florida’s representative to our Board of Directors for the Florida Institute for Human & Machine Cognition. He concluded by asking the Board to join him in welcoming Jay to the IHMC board.

Turning to Jay, Chair Dalton informed him that he may be very interested in some of the work IHMC is doing in smart environments and that he understood Jay would be spending some time with Ken after the meeting.

Director Patel thanked Chair Dalton for the warm introduction adding that he brings greetings from Chancellor Criser and that he is pleased to assume the role of liaison between the Florida Board of Governors and the IHMC Board.

Chair Dalton then introduced action Item 2, calling for the approval of the December 4, 2017 minutes. Director Baker moved approval and that motion was seconded by Director Sprague. With no discussion or changes, the minutes were unanimously approved.

Finally, moving to the last action item, Item 3, Chair Dalton asked Dick Baker, IHMC Chair of Finance and Audit to update the Board on the current financials. Director Baker thanked Chair Dalton and gave a brief report on the IHMC financials noting the progress made by IHMC in the last decade in research revenues and explaining that financially the Institute was in excellent shape. He asked for questions and hearing none, concluded his report. Chair Dalton thanked Director Baker and turning to Dr. Ford, asked him to provide his report.

Dr. Ford thanked Chair Dalton for the opportunity to provide his report. He began by mentioning that Matt Doster, IHMC state lobbyist, had joined us for this meeting to
discuss state legislative issues. He remarked that currently, IHMC is in the budget at $2.739 million recurring, and an additional $500,000 nonrecurring, for a total of $3.29 million. He then asked Matt to update the Board on the 2018 legislative session.

Matt discussed some of the difficulties of session centering around gun legislation and the higher education cuts explaining that while IHMC went into the final days of session with an additional $1 million in nonrecurring, this money was all cut, and with a great deal of assistance from the Senate on the last day, IHMC was successful in gaining back $500,000 nonrecurring. Dr. Ford thanked Matt for his comments and moved into some good news in the fundraising arena.

Dr. Ford commented that in January, IHMC received a $1 million unrestricted gift from Rishy and Quint Studer that will be used for assisting with key hires and equipment purchases, explaining that currently IHMC was in the process of developing a research program in human performance and resilience in extreme environments and expanding work in ocean technologies. He added that just three weeks ago, IHMC also received a $500,000 gift commitment from Director Ron Ewers to replace the roof in Ocala. He stated that words cannot express our gratitude to Ron as IHMC has been chasing the resources to fix the roof for a number of years and the need to fix the roof has now become critical. He mentioned that it is our intent to begin work on this project as soon as possible with summer as the perfect opportunity to do this work. And lastly, Dr. Ford explained that just this past week, IHMC finalized a $30,000 gift commitment from Innisfree hotels from Julian MacQueen to develop a rooftop garden with a number of edible plants that can be used at meetings and events hosted at IHMC. He added that we have many other opportunities for Board participation ranging from pavers to naming opportunities within the building, explaining that many of the best spaces, including this room and the robotics lab, remain unnamed.

Dr. Ford then turned to new hires stating that he was delighted to announce that Joe Gomes is joining IHMC this month as Director of High Performance. He explained that prior to joining IHMC, Mr. Gomes spent three years as the Head Strength & Conditioning Coach for the Oakland Raiders of the National Football League where he oversaw all aspects of human performance, including sport science, nutrition, strength and conditioning, player reconditioning and performance analytics. He added that during Joe’s tenure, player availability rose to unprecedented levels in the franchise’s history, highlighting his approaches to maximizing player performance, availability and durability. He added that, prior to joining the Oakland Raiders, Mr. Gomes spent five years in North Carolina, contracted as a Senior Advisor and Performance Director to the United States Army Special Operations Command where he developed the concept and operational framework for a pioneering human performance program. Dr. Ford explained that key highlights were the recruitment and development of a world class staff, developing and managing systems of evaluation, testing and profiling of key performance indicators. He relayed that Mr. Gomes oversaw all aspects of programming and monitoring for the Army Special Operations Command as well as all research and innovation for human performance initiatives, adding that he also supported the planning and development of a multi-million dollar human performance training center. Dr. Ford further stated that Joe
also served as the Director of Performance for EXOS (formerly Athletes’ Performance) for nine years beginning in 2006 and that his primary focus was on developing programs to share EXOS’ innovative and progressive methodology with industry professionals and organizations worldwide. Ken stated that during his tenure at EXOS, Mr. Gomes ran a very successful preparation program for the annual NFL Scouting Combine each February from 2007 through 2010.

Dr. Ford then discussed that Cameron Ridgewell, a Virginia Tech graduate with an MS and BS in mechanical Engineering and a BS in computer science will join Peter Neuhaus and the team working on developing new algorithms for the exoskeleton research efforts. He stated that Robert Griffin, a robotics scientist at IHMC, worked with Cameron while Robert was getting his PhD and highly recommends him. Dr. Ford also mentioned that Olivia Jackson, a Pensacola native with a degree recently earned from FSU in Psychology and Biology will begin in mid-April joining Dawn Kernagis and her team in human performance and resilience research.

Turning to his research report, Dr. Ford stated that it has been an interesting several months in the federal government since the Board last met. He commented that we have stepped from a continuing resolution, to a brief federal shutdown, to the next continuing resolution, and that we are now looking towards March 23rd as our next budget milestone. He added that nevertheless, IHMC and our research partners in government, industry and academia have persevered, and IHMC research scientists have brought in over $3 million in new funding in the past several months, with another $1.3 million waiting for completion of the contracting process.

He stated that he was excited to report that Dr. Dawn Kernagis has had a banner week in early September, having been notified of several new funding awards, two of which have now come through. First, Dr. Ford stated that Dawn received a significant award from the Office of Naval Research to study and assess the effect of ketone esters on cognitive and physical performance relevant to optimizing warfighter performance and resilience during cold-water undersea operations. In this effort, he explained that Dawn and a team of IHMC researchers will be working with the human performance experts at EXOS to examine the effects of exogenous ketone supplementation, which has been shown to introduce ketosis more rapidly than fasting or severe carbohydrate restriction, inducing a physiological state that has been demonstrated in studies to have human performance benefits and even have the potential for hypothermia mitigation. He commented that Dawn and her team are analyzing optimal dosing and timing of the ketone ester, as well as the impact of ketone supplements on mission-relevant performance in subjects of the age, cognitive level and fitness level matching the cold-water operator population. He added that Dawn has also engaged the Navy Experimental Diving Unit and the Naval Submarine Medical Research Laboratory to transition the results of her work to future in-water performance studies.

In addition, Dr. Ford mentioned that NASA has funded a partnership led by Dawn which includes Indiana University and the University of Texas to better understand the effects of microgravity on glympathic function, which when impaired by a lack of gravity has
been postulated to adversely affect certain mission-related physiological conditions, such as increased intracranial pressure and development of white brain matter hyperintensities. He stated that it is thought that this in turn could detrimentally impact astronaut performance and health both in the near and long term adding that Dawn’s team’s work could potentially refine glymphatic function monitoring technology, which could lead to its utilization in space as a diagnostic tool for crew members experiencing central nervous system changes associated with extreme environment exposures. He stated that this work could also meaningfully impact other operators working in extreme environments, such as high altitude aviators and professional SCUBA divers.

Dr. Ford mentioned that Dr. Niranjan Suri recently received an award to continue IHMC’s work in the area of collaborative road memory explaining that in this effort, Dr. Suri and his team will be consulting with Hillcrest Laboratories, a subsidiary of previous IHMC funding sponsor Interdigital, to enable collaboration from vehicle-to-vehicle and between vehicle networks and their surrounding infrastructure by collecting information from vehicles about nearby vehicles and roads, inferring behavior and needs of neighboring vehicles, and sharing relevant information with nearby vehicles or infrastructure to support safety and commercial use cases in the relatively near future.

He stated that Dr. Peter Neuhaus has been funded by Norwegian firm Halodi Robotics, which specializes in bringing full-size humanoid robots to industry and the general public at an affordable price. In this effort, he added, the IHMC robotics team will develop control algorithms, provide software infrastructure, and provide a simulation environment for Halodi and their existing platform, known as Eve, a dexterous humanoid on a wheeled base. He remarked that Eve is intended primarily for performing a multitude of tasks in the industrial and healthcare market segments, but that there are also high hopes for bringing her into the home.

Continuing on, Dr. Ford mentioned that Peter has also received a contract from Cobalt Intelligence, a local investor group to develop two prototypes of the Hopper, now called the Programmable Exercise Device. He stated that as Board members may recall, IHMC has been developing this exercise technology for NASA with the goal of mitigating the bone and muscle loss associated with long-term human spaceflight. He added that the goal of this new collaboration with Cobalt is to develop a prototype aimed at the commercial market that can be utilized for high performance athletes and sports teams as well as a version that supports rehabilitation and recovery for civilians and wounded military personnel. He stated that Joe Gomes will be working with Peter to better understand the functionality needed for this device to be effective in the commercial market and that as part of this venture, IHMC will license the product to Cobalt. He concluded by mentioning that we will keep everyone posted on the progress on this front.

Dr. Ford remarked that IHMC continues its support of Naval Air Station Pensacola’s Corry Station via funding from the Center for Information Warfare Training and that during this effort, IHMC research associate Larry Bunch will lead a team to provide technical support, integration, and modification of the IHMC Network Observatory.
visualization software on a closed network in support of training for the Center for Information Warfare Training Command. He remarked that it is exciting to see IHMC’s constantly advancing visualization tools, already implemented in applications from aircraft cockpits to unmanned aircraft operations to web-based marketing analysis, continue to make inroads in the high national priority area of cybersecurity.

And finally, Dr. Ford noted that one of IHMC’s newest research scientists, Dr. Jeff Phillips, is serving with the Naval Medical Research Unit in Dayton, Ohio adding that in this two-year assignment, Jeff is serving as a principal investigator for ongoing aeromedical research projects regarding topics such as performance in extreme environments, hypoxia assessment and mitigation, human performance modeling, cognitive performance and enhancement, and other aviation human factors topics. While Jeff remains based out of Pensacola, Dr. Ford explained that this assignment reserves fifty percent of his time for research aimed at better understanding the heretofore unexplained physiological episodes associated with Onboard Oxygen Generation Systems.

Continuing his report, Dr. Ford commented on terms of awards still in contracting, mentioning that Dawn Kernagis will be working with Wright State Research Institute in Ohio, to perform a task analysis and development of a task assessment battery focused on cognitive and physical performance on the Navy cold water undersea operation population. He explained that this effort will be closely related to Dawn’s existing awards with NASA and ONR.

He also mentioned that the human performance group of Kernagis, Gomes, Ford, Clark, and Raj will also be working with Salk Institute in California on a SOCOM-funded effort to investigate the effect of an exercise mimetic drug on exercise and cognitive performance in humans. Additionally, he stated that Dawn Kernagis, Jeff Phillips, Ken Ford, and Jon Clark will be working with HVMN, a nutraceutical company in California, on a SOCOM-funded STTR award to investigate the effect of ketone esters on human cognitive resilience in the setting of hypoxia.

He explained that Dr. Jerry Pratt, along with Drs. Peter Neuhaus and Robert Griffin, have been notified of an incoming award under a General Dynamics led Army Robotics Collaborative Task Alliance program. He commented that Collaborative Technology and Research Alliances are partnerships between Army laboratories and centers, private industry and academia that are focusing on the rapid transition of innovative technologies to the Warfighter to enable the Army's Future Force. In this overall Robotics CTA program, he stated that the Army Research Laboratory has funded a suite of high-powered teams to pursue research and development required to enable the deployment of future military unmanned ground vehicle systems ranging in size from man-portables to ground combat vehicles. He stated that IHMC’s role will be to develop planning and control techniques to enable a quadrupedal robot named LLAMA to autonomously walk or trot over challenging terrain and support or scout ahead of soldiers at an increasingly challenging operations tempo, something we hope will greatly assist our deployed forces.
Dr. Ford also mentioned several upcoming Blue Sky Meetings reminding the Board that the collection of rooms on the second floor were purposefully designed to host Blue Sky meetings. He commented that late last year, we hosted two such meetings, one for AFRL on Autonomy at Rest and the other for AFSOC on Biomarkers for Overtraining and Injury. He added that this summer IHMC will be very busy hosting four new Blue Sky meetings. He began by stating that on May 30th and 31st, IHMC will host what the Air Force is referring to as the Quantum Innovation Summit, stating that quantum technologies are developing at a rapid pace as evidenced by the recent satellite-based quantum communications demonstration, and the recent advances of small-scale quantum computers under development by industry. He mentioned that harnessing the power of quantum mechanics holds the promise for disruptive advances in the areas of timing, sensing, communication/ networking, and computing and that the ability to field these systems will lead to a significant advantage for any early adopters. He explained that this summit will bring together a carefully curated group of thought-leaders across these four quantum technology areas and identify existing capabilities and areas where enabling component development can be accelerated. He stated that a goal of the summit is to determine where quantum information science can enable new game-changing capabilities for the Air Force and the Department of Defense and where the DoD’s limited investments can best be placed in the context of quantum.

Dr. Ford explained that, on June 13th and 14th, IHMC will host the Work for Humanity Blue Sky meeting that will explore how dramatic shifts in technology and global demographic trends are reshaping the future of work. He added that while many have described these changes as an existential threat, this Blue Sky will explore the opportunities these developments offer to elevate and extend human capacity and capability for productive and meaningful work. He added that this topic touches all aspects of our current workforce and we are bringing together experts in computer science, cognitive psychology, neuroscience, education, economics, history, and social sciences to define the most meaningful roles for humans in the age of autonomy and artificial intelligence and explore how we might educate and prepare people to perform work in such a dynamic and unpredictable future. He stated that our goal is to brainstorm questions that provoke, inspire lateral thinking, and suggest new paths to unexpected outcomes on this topic.

Discussing the 3rd upcoming summer Blue Sky, Dr. Ford mentioned that IHMC will host and organize a Blue Sky meeting on July 24th and 25th for the Air Force called the Mobility Innovation Summit. He explained that for the past seventy years the Air Force’s strategy for developing capabilities required to conduct mobility operations (both aerial refueling and cargo delivery) has been to significantly leverage commercial capabilities. As such, he explained, capabilities developed by the military have considerably influenced U.S. commercial capabilities, and vice versa, ultimately leading to U.S. dominance in both the military and commercial sectors. Today, he commented, the Air Force sees the potential for rapid change in the commercial marketplace (including, but not limited to: UAV package delivery; reduced cost for cargo movement
into/through space; ultra-efficient large aircraft; etc.) and that to develop an effective long-term, national-level capability development strategy that meets requirements and postures the U.S. for continued dominance in both the military and civilian sectors, the Air Force hopes to gain a better understanding of the factors driving the commercial marketplace, addressing questions such as: “Where do you see the mobility/logistics industry headed?” and “What is the ‘art of the possible’?” He explained that the Air Force will, in turn, discuss the strategic drivers affecting future military mobility operations and that follow-on discussions may then be held to examine more closely those potential solutions that may also meet projected Air Force requirements, and develop a synchronized U.S. military-commercial research and development investment strategy.

And wrapping up summer Blue Sky’s, Dr. Ford mentioned that, on August 13th and 14th, IHMC will host a Blue Sky meeting for the Weapons Enterprise at Eglin AFB. He explained that this organization plays a critical role in basic & applied research as well as experimentation, demonstrations, testing, and delivery of weapon systems addressing the Air Force core functions of Air Superiority, Global Precision Attack, and Special Operations. He added that the Enterprise has well established processes and a battle rhythm for customer engagement, strategic partnering, technology pursuits, investment priorities, facility recapitalization, human capital needs, and tactical decision making and that this has resulted in significant advancements in weapon technologies and capabilities to meet the most pressing needs of the Air Force. He explained that the next twenty years will bring new challenges and the Enterprise must continue to anticipate weapon needs before they arise and that with numerous uncertainties in the future it seems logical to solicit the critical views of others to review the current and future weapon portfolio in light of social and technology trends and projections.

He concluded by stating that as is probably evident, these Blue Skies are becoming an important part of IHMC’s work and we are proud of our contribution to innovation and creative problem solving with our sponsors in government and industry.

Dr. Ford then turned the discussion to the Joint PhD Program, explaining that as everyone may recall, UWF and IHMC are collaborating on a joint PhD in Robotics and Intelligent Systems and that the Program Director, Jeff Trinkle, has been hired and will be arriving at UWF in July. Dr. Ford explained that Jeff will also have an office at IHMC. He mentioned that the curriculum is currently being developed and approved and ads are currently on the street for several faculty positions that may be joint hires between IHMC and UWF, depending on the candidate. He stated that the first class is scheduled to begin in fall of 2019 and the plan is for a European style PhD program in which carefully selected students will have a minimum of coursework and spend most of their time gaining research experience working closely with prominent scientists and engineers. He added that it is the goal to develop a small elite PhD program that is unmatched in quality throughout the SUS and that it is our expectation is that professionals already in the workforce will be interested in this type of PhD program.
Turning to IHMC Education & Outreach Programs, Dr. Ford briefly mentioned that Science Saturdays outreach for 3rd to 6th graders is going strong again this spring in both Ocala and Pensacola with waiting lists in both locations adding that the Ocala topics this spring include Bridges, Reaction Time, Coding is Cool and Roller Coasters and Pensacola topics include Secret Codes, 3-D Printing, Reaction Time and Roller Coasters.

Dr. Ford stated that the Evening Lecture Series continues to be wildly popular and that we have enjoyed record attendance this spring for evening lectures in both locations.

He added that on March 29th Pensacola will feature Steve Anton discussing Lifestyle Interventions to Preserve Function during Aging, followed on April 11th by Dr. Michael Okun discussing new protocols and successes in treating Parkinson’s disease, with the Pensacola series wrapping up on May 11th with Lily Mujica-Parodi. He explained that Lily is the Director of the Laboratory for Computational Neurodiagnostics at Stony Brook University and her research focuses on the application of control systems engineering and dynamical systems to human neuroimaging data with applications to neurological (dementia, epilepsy) and psychiatric (anxiety, depression, addiction, schizophrenia) disorders.

Dr. Ford mentioned that several talks remain this spring season in Ocala, adding that just this past week we hosted John Welbourn talking about athletic performance and strength training as one ages, and that on April 10th, Ocala will host Chef James Briscione, a culinary innovator and two-time champion of Food Network’s Chopped Cooking Competition. He added that as a side note, James, a Pensacola native will be leaving New York with his wife and family in the near future to return home and open a new Italian restaurant in downtown Pensacola. He ended the discussion by stating that on May 16th, cardiologist and best-selling author William Davis will wrap-up our spring season in Ocala.

Turning to the new podcast show, Dr. Ford mentioned that STEM-Talk continues to be one of the highest ranked science shows on iTunes and other podcast providers adding that STEM-Talk is nearing 900K listeners.

Dr. Ford also informed the Board that IHMC also recently participated in the Nations Cup event in Ocala once again adding that IHMC hosted a VIP evening event following the Parade of Nations, a celebration of horses, in conjunction with the Nations Cup. He stated that the event this year featured eight teams from around the world and that the Parade of Nations immediately preceding the IHMC reception featured the Budweiser Clydesdales and many of the different horse breeds housed in Ocala, known as the “Horse Capital of the World”

Wrapping up his outreach comments, Dr. Ford mentioned that on March 16th and 17th in Pensacola we are working with the local community on a new Gulf Coast community science initiative. He added that a teacher Field Trip day will be held for local area students on Friday March 16th in Seville Square and that Saturday March 17th is Expo Day also to be held in Seville Square with hands on science, engineering and math
exhibits. He stated that science organizations around our community will have booths with activities that will engage all ages and IHMC will have a presence on both days with Shari Biery coordinating IHMC’s work on this science festival and doing an outstanding job. He continued by mentioning the Robotics Open House on April 13th at IHMC in conjunction with National Robotics Month commenting that as in past years, we are expecting a large turnout, given normally we receive about 700 to 800 visitors in a three hour time period. He explained that earlier that day we will host classes from local middle schools and all of our current robots should be on display. And finally, he mentioned that once again, we are planning for the summer robotics camps and that we expect to hold the same number of camps again but all these camps may not be possible in Ocala as hopefully the new roof will be under full construction. He commented that just as before, we will host beginner and intermediate weeks as we tend to get repeat campers interested in further honing their skills in programming robots.

Dr. Ford ended his report by discussing summer interns, explaining that we are again being deluged with requests for summer internships and are evaluating candidates and beginning to make offers for summer hires. He stated that one small college in Massachusetts, Williams College has sent forty-two resumes from students looking for internship opportunities. He continued by mentioning that the Robotics group, who typically takes a large number of summer interns, has created three separate challenges for applicants in an attempt to whittle down candidates. He remarked that IHMC looks forward to once again greeting and hosting thirty to forty young people beginning in about twelve weeks.

He ended by stating that this has been a busy spring so far and that he expects this trend to continue. He added that he looks forward to seeing many of the Board at the upcoming lectures and other events at IHMC.

Dr. Ford then thanked Chair Dalton for the chance to provide this report.

Chair Dalton thanked Dr. Ford for an excellent report and asked if there were any other items for this Board. Hearing none, Chair Dalton explained that the next meeting is an in-person dinner meeting on Sunday June 10th followed by a Board meeting from 8am to 12pm on Monday, June 11th, 2018 in Pensacola.

The Board of Directors meeting adjourned at 9:45 a.m.

Respectfully submitted,

Julie Sheppard
Corporate Secretary