Horst Simon
Deputy Director

December 8, 2020

Subject: Letter of Recommendation for Dr. Soonwook Hwang

To whom it may concern:

It is my great pleasure to write a letter of recommendation in support of Dr. Soonwook Hwang for consideration as President of KISTI.

I know Dr. Hwang well and have interacted with him for many years. I regard him as an exceptional computer scientist, worthy of great respect. We have collaborated in the past, so I am quite familiar with Dr. Hwang's accomplishments as Director of the Supercomputer Center at KISTI. His earlier research contributions in grid computing, in particular about fault tolerance in the grid and distributed resource management are well respected in the field. I have listened to his conference and colloquium presentations, and he has visited me in Berkeley several times when we discussed aspects of his research in detail.

Based on my collaboration with Dr. Hwang, I can make several observations, that all demonstrate that he is an exemplary researcher. He is very quick in assimilating new technology and insights, and bringing them to bear on established problems. He has far reaching interests, and surveys the literature widely, often coming up with very intriguing new ideas. And lastly, he is always interested in applications, and enjoys working on practical problems. Dr. Hwang combines research excellence with a deep interest in applications.

Dr. Hwang has also conducted research in areas such as particle physics applications, and screening and drug discovery, with which I am less familiar. But the quality of his work, in particular his distributed computing work, is excellent and is widely published in many of the best Journals and conference proceedings in his field. His output in the number of papers, conference proceedings and invited talks is very productive. His publication record provides a clear indication of the high quality of his results.

Since 2006 Dr. Hwang has been leading supercomputing development at KISTI, a distinguished national academic HPC institution worldwide. Because of his leadership KISTI has recovered a leading position in the TOP500 list for which I am an editor. The introduction of the Nurion system in 2018 was a major accomplishment for KISTI and Dr. Hwang. This system ranked #11

on the TOP500 list, which is an appropriate location for the national system of a high tech country such as South Korea.

I had many conversations with Dr. Hwang about how KISTI can distinguish itself as a worldwide leading institution in HPC. I believe there are several directions that KISTI can take and that Dr. Hwang is well versed to pursue. Both in the U.S. and in Japan the notion of co-design for computer architecture had been leading to remarkable success with the exascale systems in the U.S. and the Fugaku system in Japan. The key is to develop a strong partnership with industry and a national desire to lead in this technology. I believe both elements are present in S. Korea with a strong industrial base for technology and companies such as Samsung that are world leaders. I would recommend for KISTI under Dr. Hwang's leadership to pursue such a private-public partnership and develop the next level of HPC systems. Understanding the critical need to control this technology the EU has taken a similar road to developing a domestic HPC ecosystem starting with the EU processor initiative. South Korea could do the same with the intellectual leadership at KISTI.

I would also recommend a significant investment in AI and Machine Learning. AI/ML depends on HPC platforms and technology to be competitive, and also has significant potential to change scientific explorations. I believe that KISTI should embark on an aggressive program to make AI/ML technologies available for researchers in Korea and also provide the appropriate hardware platform. Dr. Hwang's international experience and collaborations with leading centers worldwide put him in an excellent position to realize such a vision in Korea.

I have heard Dr. Hwang presenting talks in conferences and seminars. He is able to communicate with clarity and simplicity, even on technical subjects that are often considered dry. I have seen him handle questions from a very critical audience in a confident and assured manner, while not being distracted from the flow of his well-prepared lecture.   He has very remarkable communication skills. Because of that he has received many invitations to present his work internationally, and has built up a wonderful international reputation.

Dr. Soonwook Hwang's work, accomplishments, and promise are of the highest quality. I strongly recommend him without any reservation for your consideration for a leading position at KISTI.

Sincerely,

Horst D. Simon
Deputy Laboratory Director for Research
Chief Research officer
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Horst Simon is an internationally recognized expert in the development of parallel computational methods for the solution of scientific problems of scale. His research interests are in the development of sparse matrix algorithms, algorithms for large-scale eigenvalue problems, and domain decomposition algorithms. His recursive spectral bisection algorithm is a breakthrough in parallel algorithms. Honored twice with the prestigious Gordon Bell Prize, most recently in 2009 for the development of innovative techniques that produce new levels of performance on a real application (in collaboration with IBM researchers) and in 1988 in recognition of superior effort in parallel processing research (with others from Cray and Boeing).

Horst Simon is Deputy Laboratory Director for Research and Chief Research Officer (CRO) of Berkeley Lab. The Deputy Director for Research is responsible for the overall integration of the scientific goals and objectives, consistent with the Laboratory's mission. Simon has been with Berkeley Lab since 1996, having served previously as Associate Laboratory Director for Computing Sciences, and Director of NERSC. In his role as Deputy Director, Simon has been instrumental in the creation of new concepts such as Cyclotron Road and CalCharge that support energy innovation and forge stronger connections of the national labs with industry.

December 8, 2020

SUBJECT: President of KISTI (Dr. Soonwook Hwang)

I am writing in strong support of Dr. Hwang's candidacy for President of the Korea Institute of Science and Technology Information (KISTI). I have known Dr. Hwang for many years, beginning with his work on computational grids as a graduate student at USC, where he worked with one of my collaborators, Professor Carl Kesselman.

Since then, I have watched Dr. Hwang emerge as one of the world's foremost leaders in computational science and high-performance computing (HPC). He is widely respected as a researcher in HPC, reflected not only by his publication record in international conferences and journals, but also by his participation and leadership in the global HPC community. He is one of the "go to" individuals for insights and perspectives, not only about advanced computing developments in Asia, but as a thoughtful shaper of global HPC policies and technology practices. His leadership in KISTI's deployment of advanced computing systems has also elevated KISTI's profile.

In an increasingly global science and technology enterprise, Dr. Hwang's connections to other leaders – in Japan, China, Europe, and the United States – are major assets for KISTI and its intellectual pursuits. I believe building on these connections can only benefit KISTI as it continues to crafting pillars of excellence in advanced computing and information technologies.

I would be remiss if I did not also comment on Dr. Hwang's leadership skills. I have regularly seen him participate as an equal with some of the world's more esteemed and powerful figures in computational science. In complex situations requiring delicacy and diplomacy, I have been impressed by his ability to navigate among competing personal agendas and personalities, finding common ground while artfully making his own perspectives understood.

In summary, I believe Dr. Hwang is precisely the kind of leader who can build on KISTI's success and elevate the institution to new heights. He has my highest recommendation for the KISTI Presidency.

Regards,

Daniel A. Reed
Senior Vice President for Academic Affairs (Provost)
Professor of Computer Science & Electrical and Computer Engineering

Biographical Sketch – Daniel Reed

Daniel A. Reed is the Senior Vice President for Academic Affairs (Provost) at the University of Utah. Previously, he was the University Chair in Computational Science and Bioinformatics, and Professor of Computer Science, Electrical and Computer Engineering, and Medicine at the University of Iowa, where he also served as Vice President for Research and Economic Development. Prior to that, he was Microsoft's Corporate Vice President for Technology Policy and Extreme Computing, where he helped shape Microsoft's long-term vision for technology innovations in cloud computing and the company's policy engagement with governments and institutions worldwide.

Before joining Microsoft, he was the founding director of the Renaissance Computing Institute (RENCI) at the University of North Carolina at Chapel Hill, with joint faculty appointments at Duke and North Carolina State University. At UNC-CH, he also served as Chancellor's Eminent Professor and Vice Chancellor for Information Technology. Prior to that, he was Gutgsell Professor and Head of the Department of Computer Science at the University of Illinois at Urbana-Champaign (UIUC), as well as Director of the National Center for Supercomputing Applications (NCSA). He was also one of the principal investigators and chief architect for the NSF TeraGrid, which became NSF XSEDE.

Dr. Reed is the chair of Section T (Informatics) of the AAAS. He currently is a member of the U.S. National Science Board (NSB), which provides oversight for the U.S. National Science Foundation, chairs the Department of Energy's Advanced Scientific Computing Advisory Committee (ASCAC), chairs the National Academies Panel on Computational Sciences at the Army Research Laboratory, and serves as a member of the scientific advisory committee for Argonne National Laboratory.

Dr. Reed has served as a member of the U.S. President's Council of Advisors on Science and Technology (PCAST) and the U.S. President's Information Technology Advisory Committee (PITAC). He has served on the National Academies Board on Global Science and Technology, the International Telecommunications Union CTO Council, the Advisory Committee for Electronic Records for the National Archives, and the ICANN Generic Names Supporting Organization Council. He is the past chair of the Board of Directors of the Computing Research Association (CRA), which represents PhD-granting computer science departments in North America, and currently serves on its government affairs committee. As chair of CRA, he was one of the co-founders of the Computing Community Consortium (CCC).

Dr. Reed is a Fellow of the ACM, the IEEE, and the AAAS. He received his B.S. from Missouri University of Science and Technology and his M.S. and Ph.D. from Purdue University, all in computer science.

Vincent Breton
Co-director of France Korea Particle Physics Laboratory
Scientific Coordinator of France Grilles Research Infrastructure
Member of EGI Executive Board
Senior Scientist @ CNRS

Clermont-Ferrand, December 6th 2020

To whom it may concern:

This letter expresses my support to Doctor Soonwook Hwang application to the position of KISTI president.

I had the opportunity to get to know Doctor Hwang when I initiated the creation of the France-Korea Particle Physics Laboratory (FKPPL) in 2007. Under the impulse of Doctor Jysoo Lee, former director of KISTI Supercomputing Center, KISTI played a major role in the birth of this international Research Laboratory providing a framework for scientific collaborations between research organizations and universities in France and Korea. Currently member of FKPPL Steering Committee, Doctor Soonwook Hwang was instrumental in providing support and resources to a number of projects.

As a consequence, very successful collaborations were established in the field of e-science between KISTI and French laboratories over the years. As a fruit of a collaboration with the French Computing Center for Nuclear and Particle Physics, KISTI became from 2008 a major contributor to the Large Hadron Collider Computing Grid providing massive storage resources for the analysis of ALICE detector on the CERN collider. Soonwook Hwang was instrumental in the development of the AMGA metadata catalogue that was adopted as a metadata service for the KEK Belle-II experiment and is still in use.

KISTI engineers under Soonwook Hwang supervision contributed major developments to the first large scale drug discovery initiatives on international grid infrastructures. Their efforts paved the way to KISTI important contributions to the EGEE and EGI-InSPIRE European projects. Pioneering virtual screening computing experiments contributed to the identification of potential new drugs against malaria, avian flu and SRAS resulting in several patents.

As leader of KISTI Supercomputing/Grid/Cloud-related Research and Development Projects, Soonwook Hwang participated and gave talks regularly to European grid conferences and worshops, strengthening KISTI European collaboration and visibility.

For all these reasons, It is really my pleasure to strongly support Doctor Soonwook Hwang application for the position of KISTI president. I am strongly confident that his appointment will open new avenues for international collaborations between South Korea and Europe.

Vincent Breton

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December 12, 2020

To whom it may concern,

It is my pleasure to support the candidacy of Dr. Soonwook Hwang for the position of the President of Korean Institute of Science and Technology Information (KISTI). My qualifications for recommending Dr. Hwang are based on my expertise as a leader in the field of Grid Computing for many years. As the founding Director of the Grid Technology Research Center (2002-2008) within the National Institute of Advanced Industrial Science and Technology (AIST), an Independent Administrative Institution under the Ministry of Economy, Trade and Industry (METI), Japan; I collaborated with Dr. Hwang in the National Research Grid Initiative (NAREGI) project in Japan from 2003. While he was a research scientist at the National Institute of Informatics, Japan, I became familiar with Dr. Hwang's work and how it gained significant recognition outside of his circle of collaborators. After he moved to KISTI, I continued to form a long-term partnership between AIST and KISTI, and I have interacted with Dr. Hwang on many occasions, including at HPC, AI, and high-speed networks.

Over the years in developing Grid Computing, it was a great adventure for everyone to collaborate together to push the boundaries in the area of advanced technologies. Dr. Hwang developed his career as part of the NAREGI team in Japan. He developed his skills to interact with international partners and to provide middleware as well as application examples. His involvement has long been appreciated by the community. During this time, I personally saw the growth of his professional expertise as well as his management skills.

I believe that Dr. Hwang's career experiences have prepared him well for the position of President at KISTI. Without reservation, I strongly recommend Dr. Soonwook Hwang to be given the opportunity to demonstrate his ability as a leader in your institute.

Sincerely,

Satoshi Sekiguchi, Ph.D
Director General,
Department of Information Technology and Human Factors,
Vice President, National Institute of AIST, Japan