

South Dakota Science and Technology Authority Board of Directors
Meeting Minutes
Thursday, September 19, 2019
Lead, South Dakota

The Board of Directors of the South Dakota Science and Technology Authority (SDSTA) convened at 8:02 AM Mountain Time (MT) on Thursday, September 19, 2019, in the Education and Outreach (E&O) Building Conference Room at the South Dakota Science and Technology Authority, 630 East Summit Street, Lead, South Dakota.

MEMBERS OF THE BOARD IN ATTENDANCE

Vice Chairperson Dana Dykhouse (in person)
Secretary/Treasurer Patricia Lebrun (in person)
Mr. Roger Musick (by phone)
Chairperson Casey Peterson (in person)
Dr. James Rankin, ex-officio (in person)
Vice Chairperson Ron Wheeler (in person)
Dr. Robert Wilson (by phone)

MEMBERS OF THE BOARD ABSENT

Dr. Ani Aprahamian

SDSTA STAFF

Mr. Tim Engel, Legal Counsel
Ms. Nancy Geary, Chief Financial Officer
Mr. Mike Headley, Executive Director
Mr. Jaret Heise, Science Liaison Director
Ms. Mandy Knight, Administrative Services Manager
Mr. Charles Maupin, Mechanical Engineer
Mr. KC Russell, Cultural Diversity Coordinator
Mr. Allan Stratman, Director of Engineering
Ms. Constance Walter, Communications Director
Ms. Natasha Wheeler, Administrative Assistant

ALSO PRESENT DURING ALL OR PART OF THE MEETING

Ms. Elizabeth Freer, dialogue LLC Principal and Owner
Ms. Donna Job, Sanford Lab Homestake Visitor Center Executive Director
Mr. Alex Portal, Black Hills Pioneer Journalist
Mr. Kevin Wagner, Deadwood Lead Economic Development Executive Director
Mr. Joshua Willhite, Long-Baseline Neutrino Facility Far Site Conventional Facilities Project Manager
Ms. Debra Wolf, E&O Director (BHSU)

ITEM 1. CALL TO ORDER

Chairperson Casey Peterson called the meeting to order at 8:02 AM (MT). Roll call was held. Chairperson Peterson, Mr. Dana Dykhouse, Ms. Pat Lebrun and Mr. Ron Wheeler were present in person. Dr. Bob Wilson and Mr. Roger Musick joined by phone. Dr. Ani Aprahamian was absent.

Chairperson Peterson then asked audience members to introduce themselves.

He said if anyone from the audience had any questions or comments for the board to address, to please complete the public comment form located at the sign-in table and time will be given at the end of the agenda to discuss.

ITEM 2. APPROVE AGENDA

Chairperson Peterson asked if there were any modifications to the agenda. Hearing none, Chairperson Peterson asked for a motion to approve the agenda.

Motion by Mr. Wheeler and seconded by Ms. Lebrun to approve the agenda as presented. Motion passed unanimously.

ITEM 3. APPROVE MINUTES

Chairperson Peterson asked for any comments on the June 20, 2019 or September 6, 2019 Minutes. There were none.

Motion by Mr. Dykhouse and seconded by Mr. Wheeler to approve the Minutes of the June 20, 2019 and September 6, 2019 meetings as presented. Motion passed unanimously.

ITEM 4. GENERAL CONFLICT OF INTEREST DISCLOSURE

SDSTA Legal Counsel Mr. Tim Engel invited members of the board to disclose anything that might be construed to be a conflict of interest relative to their role on the board.

No conflicts of interest were disclosed.

ITEM 5. DISCLOSURES AND WAIVER UNDER SDCL CH. 3-23

Mr. Engel said in regard to disclosures and waivers under SDCL Ch. 3-23, he polled the board members prior to the meeting. Chairperson Peterson, whose firm has contracts with state or political subdivisions for services, and Mr. Wheeler, who acts as a governmental and external affairs consultant to SDSTA, each disclosed those interests in writing. He said the disclosures were included in the board packet. No other disclosures were made. Mr. Engel stated no board action is required.

Dr. Rankin arrived at 8:06 AM.

ITEM 6. UPDATE ON SCOPING STUDY FOR POTENTIAL SCIENCE, TECHNOLOGY, ENGINEERING AND MATH (STEM) INSTITUTE

Ms. Freer provided a progress update as a follow-up to her June 20 presentation to the board. Three institutes were finalized as destinations for site visits, including the Perimeter Institute in Waterloo, Ontario, Canada, which Ms. Freer visited on September 5 with Ms. Wolf, Dr. Heise, Chairperson Peterson, and Mr. Headley. The team met with several senior staff at the institute and gained a great deal of insight. The institute has a presentation hall that seats about 200 people, but the building is designed around spaces for collaboration and interaction. Ms. Freer shared photos from their visit, noting that a café is located at the entrance of the building to entice people to work on-site, art installations are incorporated throughout the building to spark conversation, and work spaces are designed to bring people together around white boards, chalk boards and espresso.

Chairperson Peterson commented on the Perimeter Institute's care in treating everyone well, from students, to post-docs, to faculty, making it easy for them to interact with each other. He also said the institute has a phenomenal education and outreach program, reaching audiences all over the world.

Mr. Wheeler said his understanding of the institute's funding model is that it uses provincial, federal and private funds, and Ms. Freer further explained that a third of the funding comes from each of those sectors. She said the institute does not change its fund requests from year to year; the amounts stay fixed, and any additional funds needed are raised by the institute. Mr. Headley added fundraising for the institute may serve as a good model for the Sanford Underground Research Facility Foundation (SURFF) because it relies on donations from backers who are passionate about the science, rather than a built-in constituency that a university-type institution may have to support it.

The SDSTA team and Ms. Freer will make their next institute site visits in October and Ms. Freer will research CERN. All the information will be compiled into a final report and presented at the December board meeting.

Ms. Lebrun said it will be important to encourage more PhD programs in South Dakota when talking to the legislature going forward with SURFF, because those programs will be a source of growth for SURFF.

ITEM 7. REPORT FROM AUDIT COMMITTEE

ITEM 7A. INTERNAL CONTROLS MEETING AND PREAUDIT MEETING UPDATE

Ms. Lebrun said the internal controls audit is now moving forward. The committee met in August, reviewed a number of Request for Proposals and awarded the contract to CliftonLarsonAllen (CLA), a firm from Minneapolis, Minnesota, whose proposal estimated low cost but high quality for SDSTA's needs.

She said the pre-audit committee met on September 3 with Mr. Al Schaefer from the South Dakota Department of Legislative Audit, to request an audit for the previous fiscal year. Mr. Schaefer is now on-site with a coworker, and the audit must be complete by the end of October. The report will be available to the board at the December meeting.

ITEM 7B. APPOINTMENT OF NEW AUDIT COMMITTEE MEMBER

Chairperson Peterson said he asked Mr. Dykhouse and Ms. Lebrun to continue to serve on the audit committee, and hearing no objections, thanked them for their continued service as audit committee members.

ITEM 8. FINANCIAL REPORT

ITEM 8A. FINANCIAL STATEMENTS

Ms. Geary said August had quite a bit of spending for the federal contract for operations services, which will conclude at the end of September. She said a large number of supplies arrived in August to spend out the funding. Also, a number of supplies are expected in September; a no-cost extension will be applied for items that are expected but will not be on-site before the end of the contract.

She said the SD Investment Council letter was received, and SDSTA had a very good year. The letter outlined predictions for the coming year and Ms. Geary asked what interest earning accrual percentage should be applied for fiscal year 2019. Mr. Wheeler suggested remaining at 1% and the board agreed.

Motion by Mr. Wheeler and seconded by Mr. Dykhouse to approve 1% interest earning accrual as discussed for fiscal year 2019. Motion passed unanimously.

ITEM 8B. FISCAL YEAR END INVENTORY LISTING

Ms. Geary referred to the board packet for the provided inventory listing and said it included federal property purchased by SDSTA. She said SDSTA is working with Fermilab on a process called "abandon in place", which transfers federal property onsite at Sanford Lab but owned by DOE Fermilab. Mr. Headley explained the property still has value and will be tracked as inventory, but they will not be listed in the accounting books since the property has already been paid for with federal funds. The process is a transfer of property for items still being used on-site and will better align assets for the Cooperative Agreement (CA). Mr. Engel noted "abandon in place" is a common practice for the Department of Energy (DOE) and is more cost-effective than removing and attempting to liquidate assets that are currently in place and in use.

ITEM 8C. END PER DIEM LISTING

Ms. Geary referred to the board packet for information about the per diem listing and asked the board for questions. Hearing none, Chairperson Peterson asked for a motion to accept the financial report.

Motion by Mr. Dykhouse and seconded by Mr. Wheeler to accept the financial report as presented. Motion passed unanimously.

ITEM 9. APPROVE COOPERATIVE AGREEMENT (CA)

Mr. Headley reminded the board DOE had asked SDSTA in November 2018 to submit an application for a CA for the operations of Sanford Underground Research Facility (SURF). The application was submitted early in the year, and negotiations have been underway. He said the CA will support five years of day-to-day operations as well as infrastructure improvement efforts. He said the SURF Operations subcontract with Fermilab will end September 30 and all operations activities will be funded through the CA.

Providing an update to the upcoming fiscal year, Mr. Headley said the U.S. House approved their energy and water appropriation, Long-Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE) received what DOE requested and what is in the profile, and the House named SURF in their budget. He said if granted, the expected appropriations are \$171 million for LBNF/DUNE and \$20-\$35 million for SURF—funds are expected to be granted mid-to-late November 2019.

Mr. Headley acknowledged the hard work of SDSTA, consultants and partners in formulating the CA.

Mr. Wheeler, Chairperson Peterson and Mr. Engel echoed Mr. Headley's comments, emphasized the efforts of those involved and acknowledged the CA milestone.

Motion by Mr. Wheeler and seconded by Ms. Lebrun to authorize the Executive Director and Legal Counsel to finalize the terms of the Cooperative Agreement with DOE, and to authorize the Executive Director to sign the final agreement. Motion passed unanimously.

ITEM 10. MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN SDSTA AND FRA FOR LBNF/DUNE

Mr. Headley said he has been working with Mr. Engel to update the MOU with Fermilab (FRA) to reflect the change in relationship resulting from the new CA between SDSTA and DOE. Hearing no questions or comments concerning the updated MOU, Chairperson Peterson asked for a motion to finalize the agreement.

Motion by Mr. Dykhouse and seconded by Mr. Wheeler to authorize the Executive Director and Legal Counsel to negotiate the final terms of the Memorandum of Understanding between SDSTA and FRA for LBNF/DUNE and authorize the Executive Director to sign the MOU. Motion passed unanimously.

ITEM 11. SURF FOUNDATION (SURFF)

ITEM 11A. SANFORD UNDERGROUND RESEARCH FACILITY FOUNDATION (SURFF) UPDATE

Mr. Bonde recapped the goals for establishing the foundation to include the following: renovate the Education and Outreach (E&O) building, create an E&O endowment, develop a STEM institute, support new and existing SURF education programs, and support special projects such as the Sanford Lab Homestake Visitor Center, other initiatives and operational support.

In addition, Mr. Bonde reviewed project milestones to include the following: select the initial board members, file the South Dakota (SD) Articles of Incorporation in June 2019 (accepted by the State of SD), prepare a 501(c)(3) application, develop a director job description, and file a tax identification

number application (accepted by the IRS) in July, create draft Bylaws, and conduct the first board meeting. At the SURFF board meeting, the Articles of Incorporation and initial board members were ratified, Bylaws and a conflict of interest policy were adopted, the Attorney in Fact was approved, the bank authorization resolution was adopted, and the 501(c)(3) application form was approved to be signed and filed.

Expected upcoming milestones include: in October—hire a director, recruit board members, establish a foundation office; in November—onboard support staff, continue board member recruitment, brand and continue strategic planning; in December—gather materials, identify prospects and define campaign objectives; in January 2020—present the public SURFF roll-out, begin a campaign design and case of support concepts; in February—finalize a campaign design with project costs, develop the board and continue to identify prospects; in March—generate a scale of giving, offer naming opportunities and create a case statement; in April—finalize the case statement brochure and identify feasibility study interviewees; in May—study schedule and begin interviews; and in June—complete study and begin work on the capital campaign.

As the newly elected Chair of the SURFF board, Mr. Wheeler commented that the SURFF board will operate differently than the SDSTA board, as it will be designed as a fundraising board and the number of board members can be much larger. As the appointed Executive Director of the foundation, Mr. Headley said the Bylaws will allow the SURFF board to have between five and 25 members. It was also confirmed that the foundation is set up as supporting organization to the SDSTA as noted in the 501(c)(3) application.

Ms. Lebrun asked if the SURFF board will be accountable to the SDSTA board and verified the SURFF director will be hired by SDSTA. Mr. Headley confirmed.

ITEM 11B. RATIFICATION OF ESTABLISHMENT OF INITIAL SURFF BOARD OF DIRECTORS

Mr. Bonde explained that the initial SURFF board members will be ratified by the SDSTA Board and at future board members will be voted in, following an established procedure.

Mr. Engel stated that Mr. Wheeler, Mr. Dykhouse and Chairperson Peterson of the SDSTA Board are on the initial SURFF board. If they recused themselves from the vote on the motion to ratify the initial board, there would not be a quorum available to ratify the SURFF board of directors. Accordingly, they are allowed to vote. He also noted doing so is consistent with the supported organization/supporting organization relationship between SURFF and SDSTA.

Motion by Ms. Lebrun and seconded by Mr. Dykhouse to ratify membership of initial SURFF board of directors as presented. Motion passed unanimously.

ITEM 12. REPORT FROM EXECUTIVE DIRECTOR

ITEM 12A. DECLARATIONS OF SURPLUS (4)

Mr. Headley referred to the board packet and noted four declarations of surplus: 1) steel rail that is not compatible with equipment onsite, 2) a thermal imaging gun that doesn't function properly for the intended use, 3) incinolets that have been replaced with an updated waste management system and 4) wood guides that needed to be replaced to meet shaft specifications.

ITEM 12B. SDSTA QUARTERLY UPDATE

Mr. Headley reviewed the current Environment, Safety and Health (ESH) department's safety status report which depicts 16 continuous months without a recordable injury. He said the impressive safety record has a cost savings shown by a 23% decrease in recently renewed Workers Compensation rates, resulting in a \$60,000 savings for the year. He said recent ESH milestones and events include: a deep-

dive risk assessment for the Yates Shaft, Emergency Response Team staff onsite to provide 24/7 availability with two personnel per shift, an SDSTA work planning and control program presentation at the LBNF Far Site Enterprise Assessment Review, receipt of the South Dakota State Explosives Permit for SDSTA's Renewal of License, an onsite blood drive that netted twice the expected participation and continued updates to ESH Manual chapters.

Mr. Headley said recent lab updates include: a continuation of strong federal funding, an expected signature date for the SURF Operations CA in late September, continued pre-excavation work for LBNF, an expected return to full-shaft travel in the Ross Shaft (500 feet-per-minute) before the end of the month, and an increased maximum underground headcount by early October, allowing for 144 people underground. He said the Oro Hondo main fan variable-frequency drive installation and commissioning work is set to complete in October, LUX-ZEPLIN (LZ) installation continues and the remaining 63,637 liters of LZ xenon are scheduled to arrive before the end of 2019. Mr. Headley added the 60% design for the new Maintenance Support Facility is complete and deconstruction of the old building is almost done, the STEM institute study group completed the Perimeter Institute site visit and is planning a visit to the Bay Area of California in October, and the SURFF board held its inaugural meeting with a search now underway for a foundation director. In regard to cultural activities, the American Indian Science and Engineering Society (AISES) summer science program at the Cheyenne River Tribal School was attended, 23 schools were visited, including seven new schools, to provide information on E&O opportunities, and five tribal governments were visited to provide updates on lab progress.

Mr. Headley noted Commissioner Brendan Carr of the Federal Communications Commission visited the lab on September 3. Commissioner Carr was in South Dakota to investigate improved data infrastructure and gained insight into how broadband is utilized at Sanford lab.

Mr. Headley also shared a video recently created by the Communications Department and said efforts are being made to update the lab's YouTube channel and diversify the ways in which information about the lab is being shared.

Mr. Headley then proposed a series of board meeting dates for 2020 and Ms. Knight said she will poll the board to get their feedback on those dates.

ITEM 12C. LUX-ZEPLIN (LZ) UPDATE

SDSTA Engineer Mr. Charles Maupin presented an update for the LZ project and shared photos of the Time Projection Chamber (TPC) and Inner Cryostat Vessel (ICV) assembly and insertion, praising the assembly and insertion team for their work. He also provided updates on the progression of the cryogenics system, xenon system, outer detector system, and Electronics Data Acquisition and Controls systems, using photos to illustrate the components. The TPC/ICV transportation underground is set for October and full LZ startup should take place in Spring/Summer of 2020.

Mr. Maupin also described many of the safety precautions considered throughout the design process of the LZ project, citing backup systems, comparison to other similar systems such as the Large Underground Xenon (LUX) experiment, and conversations with a variety of relevant parties such as scientists, technicians and engineers.

The board recessed at 9:35 AM for a short break. They reconvened at 9:45 AM.

ITEM 12D. LONG-BASELINE NEUTRINO FACILITY (LBNF) UPDATE

LBNF CF Project Manager Mr. Joshua Willhite provided a review of the design footprint for LBNF, including its geographic location in relation to the Yates and Ross Shafts, and the dimensions of the LBNF site excavations. He also reviewed some of the contract language, such as pre-excavation work,

or “1A,” Reliability Projects (projects paid for by LBNF but not performed by LBNF or their subcontractors), and Excavation, or “1B” work.

Mr. Willhite emphasized the project’s focus on safety, and said they completed a very successful review by the DOE Office of Enterprise Assessment that cited major improvements to the FRA construction safety program and work control process since 2015. He said the reviewers also complimented FRA and SDSTA management and worker commitment to safety.

Mr. Willhite provided an overview of LBNF pre-excavation work being executed by the Kiewit-Alberici Joint Venture (KAJV) including the tramway rehabilitation.

Mr. Willhite said an average of approximately 82 personnel related to the LBNF project are onsite, and the LBNF dedicated site team consists of 11 personnel, with another construction coordinator soon to be added to the team. Presenting photos, Mr. Willhite highlighted the continued progress of the project.

He said there may also be an opportunity to reduce the overall project schedule by several months by performing a subset of “1B” work during the “1A” phase, including the installation of blast doors, preparation of the 3550L for raise bore machining, and excavation of the path to the bottom of the raise bore at the 4850L.

Mr. Willhite announced that advertisement of an official Request for Proposal for the excavation phase is planned for early October, to be awarded by mid-year, and mobilized in late 2020.

SDSTA board member and DUNE Institute Board Chair Dr. Wilson reminded the board that DUNE is working in collaboration with LBNF. He said the technical design report for the experiment was submitted to the main international oversight committee over the summer and is a major milestone. He said the final comments recently came back and were very minimal, and the executive board for the experiment is expected to approve the technical design report. The report will define what part of the experiment will be managed by DOE and what part will be international.

Dr. Wilson said an LBNF/DUNE collaboration meeting on May 18-22 will be held in Deadwood, SD, with approximately 250-300 attendees expected.

Motion by Mr. Wheeler and seconded by Mr. Dykhouse to accept the executive director’s report as presented. Motion passed unanimously.

ITEM 13. SDSTA POLICIES AND PROCEDURES

Mr. Headley referred to the board packet to highlight updates to the SDSTA Publication Policy, Sexual Harassment Investigation Policy and Telephone Reimbursement Policy.

Motion by Ms. Lebrun and seconded by Mr. Dykhouse to approve the updated Publication Policy, Sexual Harassment Investigation Policy and Telephone Reimbursement Policy, as presented. Motion passed unanimously.

ITEM 14. EXECUTIVE SESSION

Motion by Mr. Wheeler and seconded by Mr. Dykhouse to enter into executive session to discuss personnel matters and to consult with legal counsel concerning legal and contractual matters. Motion passed unanimously.

The board recessed at 10:24 AM for a short break followed by executive session. They reconvened in open session at 11:19 AM.

Dr. Rankin and Mr. Musick left the meeting following executive session.

ITEM 15. REPORT FROM EXECUTIVE SESSION

Chairperson Peterson reported that the board discussed personnel matters and consulted with legal counsel concerning legal and contractual matters. No action was taken.

Motion by Mr. Wheeler and seconded by Ms. Lebrun to approve the executive session report. Motion passed unanimously.

ITEM 16. CONFIRM DATE AND TIME OF NEXT MEETING

Chairperson Peterson asked if anyone had concerns with the board meeting scheduled for Thursday, December 12 at 9:00 AM (MT), with a catered lunch to follow. No objections were made.

ITEM 17. PUBLIC COMMENTS

Mr. Kevin Wagner shared comments to provide an update on the last 12-18 months of work from the Deadwood Lead Economic Development board, addressing an affordable housing shortage in the area. He presented a map with proposed land area for development and said agreements are being made with developers, focusing on single-family affordable-housing homes, in a price range of \$150,000.00-\$270,400.00. Mr. Wagner said within a 25-mile radius, 24 homes were available on the market on February 26, 2019, but only seven homes are on the market today, September 19, 2019, built in the last 50 years and priced between \$150,000 and \$270,400. He also said there are currently zero leasable homes in that range.

Mr. Wagner said developers will be challenged by the local geography, but that they are planning on bringing in modular homes that are set on foundations to mitigate the need for man-camps as more workers come into the area. He said Deadwood, for the state, currently has the most workforce living outside of the community at 94.6%, compared to an average of about 60% workforce not living within the community.

Mr. Wagner noted he plans to attend the December board meeting and update the board on continued progress toward affordable housing in the area.

ITEM 18. BOARD COMMENTS

Mr. Wheeler reminded the board that the budget that was passed in June, includes an increase to the salary of the SDSTA Executive Director. Mr. Wheeler also said kudos on the safety record and thanked the staff. Furthermore, he extended his thanks to Chairperson Peterson for his work and support of the development of SURFF.

Dr. Wilson said getting the CA in place is very impressive and, given the timescale it often takes for these things to come together, the CA sends a strong message about the leadership of this facility and the collaboration.

Mr. Dykhouse echoed Mr. Wheeler's comments and said SDSTA has a significant safety record and is proud of the safety culture growth.

Ms. Lebrun concurred with the comments already shared. She said the progress being made is stupendous and offered her congratulations to everyone.

Mr. Engel had nothing to add but encouraged, "full steam ahead."

Chairperson Peterson said he is proud of everyone and proud of what is being accomplished. He is looking forward to SURFF and everything it precedes.

ITEM 19. ADJOURN

Chairperson Peterson called for a motion to adjourn.

Motion by Mr. Dykhouse and seconded by Mr. Wheeler to adjourn. Motion passed unanimously.

Meeting adjourned at 11:41 AM.

DRAFT