Links shared:
https://9381c384-0c59-41d7-bbdf-62bbf54449a6.filesusr.com/ugd/14d834_314550f8946e4fa18a643c53aeec4954.pdf - Erik Martin
https://www.dayoneproject.org/post/a-focus-on-teacher-effectiveness-shortages-and-cultural-proficiency - Erik Martin
https://obamawhitehouse.archives.gov/blog/2017/01/05/try-home-scouting-local-solutions-rapidly-scaling-whats-working - Megan Smith
https://chiefscienceofficers.org/ - Megan Smith
https://www.sfsdcspathway.org/ - Aileen Owens (Pittsburg)
https://www.researchinsociety.org/ - Amanda Smith (Central, PA)
www.legacybuildersfoundationinc.org - Vickie Perdue Scott
stempushnetwork.org - Talia Stol @stempush

Town hall notes - 1/5/21

- Mary Eileen Wood: "Shift NSF funding from almost entirely large research players back to including a significant number of front line change agents' new template proposals".
- DaNel Hogan - @TheSTEMAZingPro - AZ: "We do lots of work in early childhood STEM education in both English and Spanish but also feel the entire PreK-Grey population needs attention".
- Lisa Blank @ North Country STEM: "I'm most concerned about roadblocks to participation because of excessive state mandates".
- Duggan: "remove barriers that encourage competition and encourage more collaboration across institutions — bring industry to the table to help support programming/interventions that are successful".
- Lisa Blank @ North Country STEM: "Those same mandates also restrict funding that could be used to support STEM education in the preK-12 environment.
- Megan Smith: "FYSA Chief Science Officers program is a great meta move (created in AZ, now in >8 states)… if you have student CSOs in your schools, you have a student voice for all STEM programs; https://chiefscienceofficers.org/".
- Lisa Blank @ North Country STEM: "we need collective advocacy. Federal level is great, but our states in some cases, are providing significant barriers to our efforts".
- Duggan: "Expand points of STEM entry after high school - post-covid recovery should provide opportunity for adults as well as K12 to enter the STEM workforce - from certificate/CC to undergraduate and graduate level".
- MIchelle Amiot: "Time; early science experiences are limited in urban public schools; we know that early experiences are critical to later access and interest in STEM".

- Tanner Huffman @TCNJ: “Educators from the community for the community. Increasing teacher diversity is not just about what teachers look like but also where they are from, what they value, and how they reflect the values of the community”.
- Tom Peters @ SC's STEM: “The mandate roadblocks are based on seat time as proof of learning rather than demonstrated competencies. We need to rethink what and how we assess”.
- Jennifer Jensen, IN DOE: “Consider policy audits that might expose barriers to equity and access”.
- Diane Walker @ Antelope Valley East Kern STEM Network: “Incentivizing local high school education and social service academies, particularly in our areas that are both rural and highly diverse”
- Mike Rubin @CentralMA STEM: “A huge component of the work we are doing in Massachusetts right now, which helps build a great deal of authenticity. Success breeds success as well, with politicians buy-in coming from that”.
- Matt Pronio, Nepris: “We work with CSO’s and are connecting them with employers for moving their projects forward. Amazing students and program!”.
- John McFarlane - ID STEM: “Provide better connectivity to rural communities. This can then become the conduit for additional resources and opportunities”.
- DaNel Hogan - @TheSTEMAZingPro – AZ: “Can we also focus on killing testing that is siphoning an excessive amount of money out of classrooms and continues to damage education?”
- Annette Venegas Washington STEM Network: “In my district I have formed partnerships with business and STEM groups- example Dell and EiE in Boston, and Windermere and CreositySpace. I have been provided funding for materials for students in the highest needs schools".
- Mike Rubin @CentralMA STEM: “Inviting industry into the schools and adapting curriculum around their needs - attitude of mutual support”.
- Lisa Blank @ North Country STEM: “We need to make STEM education a priority in our states. Too many "lone wolves”. We need to work together to have a bigger, louder, really booming voice!”.
- Tonya Matthews @MI STEM: “Standardize incorporation of cultural competency training for STEM teachers - too often this is considered 'extra' or 'a given' for teachers working in urban or rural or diverse environments. But we see it is not in student self-efficacy outcomes”.
- Shane Woods: “Leveraging your informal science education partners is key to increasing the reach of STEM experiences beyond the classroom and can include the family in the learning”

- Tonya Matthews @MI STEM: “Standardize incorporation of cultural competency training for STEM teachers - too often this is considered 'extra' or 'a given' for teachers working in urban or rural or diverse environments. But we see it is not in student self-efficacy outcomes”.
- Kris McAloon @Indiana: “In Indiana, one of the primary barriers to equity and access is the modern Red Lining effect of high stakes testing and accountability structures. The resulting over emphasis of test preparation in low-income school districts reduces access to high quality STEM Education”.
- Annette Venegas Washington STEM Network: “High stakes testing is a huge barrier to equitable access to STEM and science education”.
- Lisa Blank @ North Country STEM: “That over emphasis on testing is making kids at very early ages feel like failures. It's so sad. Joy is brought back to learning through STEM!
- Kris Mooney @San Diego: “Consider requiring federally funded (NSF etc) science research efforts to incorporate genuine efforts to connect with marginalized communities in their Broader Impacts in ways that are collaborative and at the service of communities' interests”.
- Aileen Owens, Pittsburgh PA: “Working with rural and urban schools to build a CS/STEAM pathway using CT as the new literacy for all students. Here is ongoing work through an NSF Grant in rural KY and PAsmart Grant in PA: https://www.sfsdcspathway.org/”.
- Irene Porro@Framingham State University: “Provide universal connectivity and broadband. With the actual technology (computers) these are fundamental tools to do STEM. Most of all this is fundamental to promote equity”.
- Matt Pronio, Nepris: “This is what we (Nepris) do 24/7 - connecting students anywhere with industry professionals virtually. 100k + educators use us to connect with our 40k+ industry pros across the globe to give students a global view of what their futures can be. Contact me if I can help in any way: matt@nepris.com”.
- Amanda Smith @ ENGINE of Central PA: “ARIS ---formerly NABI that works on broader impacts of NSF”.
- DavidJLockett -@AEF_Program Fellow NASA: “Broadening Participation in STEM involves promoting those strategic research and development partnerships”.
- Julie Olds: “Access to NSF funding for more “in the trenches” organizations that are working in schools would be huge”.
- Beth Demke @ ND STEM Ecosystem: “STEM funding needs to be available to informal education, like museums, not just formal school institutions. Many STEM professionals identify the experience that "sparked" their passion for STEM was an afterschool program or museum camp or visit”.

- Teresa Wilson: “Also providing opportunities for 6th-8th grade students, and 9th-12th grade students to travel around the country to visit colleges' STEM Departments”.
- Duggan: “I agree with the Broader Impact suggestion, but NSF has to also recognize it is not always "Faculty" doing this work”.
- Fab Clayton @Carmel, IN: “Students need ready access to the internet and computers and early digital skills/literacy”.
- Mindy Porter@ Bentonville AR: “Informal education organizations play a large role in STEAM opportunities for learners”.
- Jennifer Irvin@STMSTL: “Perhaps looking at the location of the programs and ensuring equity in location and access. Look at the big picture i.e., in order for most students of color to visit a science center they must travel outside of his/her community, pass large mansions etc..”.
- Heather Kleiner: “Digital connectivity needs to be as universally accessible as other basic household utilities such as water and electricity.”.
- Disan Davis@PUSH & NYC Ecosystem: “Improving equity “in STEM” is important, and equally is supporting equity in STEM-literacy and STEM-positive values for *everyone across our society*. I think this is separate from the career “pipeline” and worthy of its own emphasis. I think this can be supported by improving conversations on ethics, historical injustices in STEM, etc. by supporting OST organizations like ours to expand these, as well as expanding teacher training and revising standards that can allow teachers to have these conversations openly with their students”.
- Matt Pronio, Nepris: “We’ve found there is a huge need to highlight ALL post secondary options for students - virtual tours and live looks into higher ed options, CC and Uni, apprenticeships, certificates, etc. Students need to be aware of all to best find their fit!”.
- Dr. Vickie Perdue Scott: “Please also consider expanding and increasing 21st CCLC Resources for STEM funding K-12. We are providing and closing the gap for high need underserved communities in GA K-12. www.legacybuildersfoundationinc.org”.
- McAloon @Indiana: “Students build their STEM Identity as early as 9 yrs old. And by that time they have spent several years being told they are failures in Math. A notion that is reinforced by well intentioned but misguided Math "interventions".
- Cliff Zintgraff: “Developing computer literacy--knowledge and skills--for all K-12 stakeholders. Engaging the community in design of programs, and training them as trainers, including training students as trainers”.
- Aileen Owens, Pittsburgh PA: “Computational thinking should be the new literacy that allows STEM to be addressed”.

- Kristen Harrison @ Portland OR: “Let's make sure that we have a focus on improving equity of access to high quality opportunities 1) in schools and 2) in expanded learning opportunities”.
- Beth Demke @ ND STEM Ecosystem: “Sustainable funding for STEM is critical!
- Heather Kleiner: “Funders want to provide seed money and expect organizations to develop sustainability beyond the first year”.
- Lorraine Shaffer: “Or grants are used for the purchase of STEAM products that never get in the hands of children - no support for meaningful engagement with tech”.
- Mary Eileen Wood: “Are we considering the importance of the skilled trades to U.S. economic success as we move forward, shifting from college-for-all thinking to "successful careers for all"? At the school level, it is very difficult to bring the skilled trades into the discussion or planning with equal footing”.
- Suzanne McDonald: “Digital connectivity should be a priority”.
- Tom Peters @ SC's STEM Learning Ecosystem: “the old Eisenhower Science & Math funding model worked wonders for many years. It was a flow through and not competitive grant”.
- Lisa Blank @ North Country STEM: “I've seen so many "labeled" students really shine in STEM programming. Our current school programming does not provide opportunities for many students to share their talents and explore THEIR interests”.
- Alison Legg @ STEM PUSH Network and Remake Learning: “**STEM PUSH i**s focused on equitable access to college admissions through strengthening of PreCollege OST programs and the development of alternative, anti-racist admissions metrics”.
- Gail Alpert: “Get rid of competitive grants. Allot districts with money for STEM. Michigan has a state grant for FIRST Robotics that enabled us to go from rich districts having teams to over 60% of districts having it now because of funding”.
- DaNel Hogan @TheSTEMAZingPro – AZ: “And include PreK in funding opportunities! So often these grants are just for K-12 and leave out PreK all together”.
- Heddy Clark @STEM SENC (NC): “A college of education is the lead organization of our ecosystem. (STEM SENC)”.
- Amanda McCammon@IndianaEcosystem: “STEM in the early years must be a priority but we cannot do that if we do not first address equity and access issues”.
- Suraida Nanez-James @ TX EcoSysTEM: “I know of many resources for funding students to pursue STEM careers but not many that integrate STEM Education research. If you apply to these, you may not get them unless they are solely science”.

- Rae Ostman @ Arizona State University: “Important point about sustainable funding - I think it’s also tied to **equity** (applying to competitive grant programs are incredibly resource intensive and also privilege academic researchers over practitioners)”.
- Aileen Owens, Pittsburgh PA: “School districts need to develop a mechanism for adopting innovation. It is currently not set up for this”.
- Ken White - Long Island NY: “Consider restoring the role of mission agencies like the Department of Energy, NASA, and others in STEM education, particularly at the K-12 level. Energy, for example, has a geographically diverse footprint in it's national labs and is the largest funder for physical science research. The informal education role for teachers and students through our nation's leading scientists presents an opportunity”.
- Lynda Kennedy @NYC STEM Ed Network: “Don't forget science museums and STEM rich cultural sculptures- they are great ed partners and embedded in communities”.
- Duggan: “planning for sustainability from conception of ideas is essential. Diversified funding is also key. NSF should encourage more collaborations across program efforts”.
- Jenny Geno, Saginaw, MI, Great Lakes Bay Region: “Broadband access is critical-need a national strategy to address this”.
- Karen Hughes - LEGO Education: “Ensure that the likely 2021 reauthorization of Title II in the Higher Education Act doesn't miss an opportunity to support better teacher recruitment to include both more diversity and also meeting the needs of rural communities”.
- Jennifer Irvin@STMSTL: “Tuition reimbursement across more STEM careers and loan forgiveness”.
- LaTrenda Sherrill: “How do we not incentivize districts that have disproportionate discipline by giving them more federal funding? what work can you Keep the state accountable for as it relates to this disproportionately”.
- Matt Pronio, Nepris: “Digital Literacy, Financial Literacy, Workforce Readiness, and Job Shadows/Virtual Internships are the areas that we’ve found to have had the biggest increase in demand from our educators and partners across the country this past year (which Nepris does widely)”.
- Me'lani Joseph: “Leverage strong Black and Brown middle school and high school students in math and science as part of the solution. They could be mentors to younger students and in the meantime cultivate their own interests, proficiencies and confidence in STEM".

Key words: equity, access, funding, grants (inclusive of all grade levels), sustainability, informal education