



# Washington Office of Superintendent of **PUBLIC INSTRUCTION**

## *Mobius Science Center*

### 1. **Purpose:**

The purpose of the Mobius Discovery Center Outreach Project is to expand science, technology, engineering, art, and mathematics (STEAM) education to underrepresented student populations in rural, tribal, and low-income communities. The project provides STEAM outreach and field trip opportunities to build general awareness of STEAM and Next Generation Science Standards (NGSS) initiatives in the local schools and communities, and to build capacity for STEAM teaching and learning in the region.

### 2. **Description of services provided:**

- Educational programs include: classroom workshops, planetarium shows, and STEAM kits for school groups; STEAM-integrated workshops designed to fit into existing grade-appropriate learning goals at each school or community center; planetarium shows to align with curriculum and spark curiosity, and STEAM kits which are grade-level appropriate and engage students kinesthetically in various science topics.
- Community engagement evening programs, a collaborative effort with local organizations (e.g., STEM Night, Science Night), are hosted at an elementary school in the region. Mobius educators bring hands-on STEAM activities or science models to engage students and their families.
- Field trip visits to Mobius Science Center engage students with the same workshops that can be provided in the classroom, as well as extended hands-on learning time in our exhibits. To provide the value of in-person learning during the pandemic, Mobius distributed 1,000 "Come Back & Play" passes to students who received STEAM kits. These passes are free admission to Mobius for one adult and one child to use at their discretion for in-person learning as an alternative for school-based field trips.
- In response to feedback from interested parties in the 2020-2021 school year, Mobius educators modified and improved STEAM kit offerings to include language about science careers, the engineering design process, and specific scientific vocabulary. Included in each kit is a curated list of recommended reading to extend learning beyond the kit into the home or classroom of the students. Mobius increased the clarity in instructions, improved layout and instructional photos, and developed additional activities to deepen learning in

each kit. The focus of each kit was modified from “STEM” to “STEAM” to include art as a core STEAM value. Kits now serve a wider variety of ages from pre-K - 8th grade. Mobius delivered 1,517 STEAM kits in the 2021-2022 school year.

**3. Criteria for receiving services and/or grants:**

Those receiving services from Mobius Science Center are from underrepresented populations in Northeast Washington school districts. The criteria used for school partnerships include Title I, rural and tribal schools. Urban/suburban schools Free/Reduced-Priced Meal rates range from 27-48%; rural schools range from 30-99% (OSPI, 2019).

**Beneficiaries in 2021-22 School Year:**

Number of School Districts:	9
Number of Schools:	24
Number of Students:	2,546
Number of Educators:	48
Other:	1,000 - Parents

**Number of OSPI staff associated with this funding (FTEs): 0**

**Number of contractors/other staff associated with this funding: 1**

<b>FY22 Funding:</b>	State Appropriation:	\$100,000
	Federal Appropriation:	\$0
	Other Fund Sources:	\$0
	<b>TOTAL (FY22)</b>	<b>\$100,000</b>

**4. Are federal or other funds contingent on state funding?**

No

**5. State funding history:**

<b>Fiscal Year</b>	<b>Amount Funded</b>	<b>Actual Expenditures</b>
2022	\$100,000	\$100,000
2021	\$100,000	\$100,000
2020	\$100,000	\$99,931
2019	\$100,000	\$100,000
2018	\$100,000	\$100,000

**6. Number of beneficiaries (e.g., school districts, schools, students, educators, other) history:**

<b>Fiscal Year</b>	<b>Number of Schools</b>
2022	9 districts/24 schools/2,546 students/48 educators/1,000 family members
2021	5 districts/11 schools/2,605 students/76 educators/258 family members
2020	8 districts/18 schools/2,823 students/42 educators/600 family members

**7. Programmatic changes since inception (if any):**

2021 was initially planned as an outreach-focused year, however, the continuation of the COVID-19 pandemic was reflected by lower in-person student participation numbers during the fall and winter of 2021. Due to the pandemic, planetarium shows were put on hold until the Spring of 2022. Mobius focused on refining and improving STEAM kit content in alignment with stakeholder feedback, as well as developing new community partners to serve students in these unprecedented times.

In 2021 and 2022, Mobius extended partnerships to five after school groups serving underrepresented youth, and two lower socio-economic pre-K classes. In 2022, Mobius prepared and delivered kits to schools and community partners, as well as reignited in-person learning through outreach workshops and STEAM days at local schools. Mobius also developed new curricula for pre-K students for new community partners.

**8. Evaluations of program/major findings:**

Mobius continued the partnership with Robert Idsardi, PhD. to evaluate Mobius' educational programs. A survey was developed by Robert Idsardi, which was sent to teachers and leaders in community partnerships. Interested parties were surveyed on student engagement, student enjoyment, support by Mobius staff, curriculum alignment to Next Generation Science Standards, program pacing, student self-efficacy, relevancy, connection to STEM careers, and overall value of the provided programs. Out of 24 stakeholders, 11 responses were gathered. Of these 11 responses, feedback was overwhelmingly positive in all categories. 100% of stakeholders agreed that students were engaged in and enjoyed the content provided by Mobius. 90% of stakeholders agreed that curriculum was aligned with Next Generation Science Standards, with 10% answering "I don't know", which may be explained by our partnership with community partners outside of traditional schools. 90% of participants thought the pacing of activities was well-paced. 100% of students were able to complete the activities. 90% of participants felt that curriculum

was relevant to students, with one participant reporting “neither disagree/agree”. All participants who experienced curriculum taught by Mobius educators agreed that Mobius educators supported staff and students during the activities. 100% of all participants agree that the activities were a valuable experience that supported the development of STEM interest in students.

Some comments from the survey participants include “The students were thrilled with their Mobius experience. The variety of engaging activities helped all students learn and stay focused during their time.” And “My students were a little anxious about dissecting cow eyes at first, but quickly realized how interesting and cool it was. They were really engaged, made connections to our learning in class, and still talk about the experience.”

Some suggestions for improvement include “This program perfectly fit the allotted hour. More discussion around careers in the STEAM fields is always valuable for students.” In the future, Mobius staff will include more STEAM career talk as a valuable conversational tool for students and educators.

## **9. Major challenges faced by the program:**

This year has seen major transitions in the education department at Mobius, including the reduction of staff as well as the introduction of a new outreach coordinator. Training was required for the new outreach coordinator, and scheduling outreach workshops was impacted by health and safety protocols in classrooms.

Understandably, many schools were not allowing outside visitors during the fall and winter of 2021. However, Mobius made new community partners with afterschool programs who were open for in-person activities, and in this way, Mobius continued serving the community by connecting with students from 5-10 schools weekly through these low-income afterschool programs. In the Spring of 2022, Mobius split efforts to visit schools that were re-opening to the public, as well as serving the schools that could not have visitation by delivering STEAM kits. This was a difficult balance with limited staff, however Mobius created partnerships with Whitworth University and Eastern Washington University for interested college volunteers. Volunteer efforts were incredibly helpful in providing support for STEAM kit creation and in-person student engagement. Mobius staff coordinated with professors at the universities to create for-credit programs for volunteers, increasing the value of the time and effort involved in volunteering for these college students. Two of the volunteers are now education staff at Mobius and will continue to provide support as paid employees for future OSPI grant opportunities.

## 10. Future opportunities:

Mobius will continue to grow our audience, seeking new ways to connect with underrepresented youth in our area, including maintaining and creating new relationships with community partners. Community stakeholders at afterschool community center programs have been incredibly excited about our relationship, and we will seek to maintain a recurring relationship with these groups.

STEAM kits are a valued tool in our community. In 2022 and 2023 we are working to create new kits to serve a broader audience, including a fine-motor skills kit for toddlers.

As regulation allows, we want to safely reintroduce the planetarium as a part of our community outreach. The planetarium sparks curiosity and engagement in students as they experience something truly unlike anything they have seen before. The planetarium was temporarily put on hold due to close confinement. In 2022 and 2023 we will look to grow our repertoire of shows and associated materials and workshops.

## 11. Statutory and/or budget language:

ESSB 5693, Sec. 522(11)(g) - \$100,000 of the general fund—state appropriation for fiscal year 2022 and \$100,000 of the general fund—state appropriation for fiscal year 2023 are provided solely for the Mobius science center to expand mobile outreach of science, technology, engineering, and mathematics (STEM) education to students in rural, tribal, and low-income communities.

## 12. Other relevant information:

Mobius programs at West Central Community Center, North East Youth Center, and the three local Boys and Girls Clubs helped serve students from multiple schools and districts. It is challenging to tally the exact impact of these programs; however, we do know that by providing programming to these community centers, Mobius was able to extend our reach further than ever before. We hope to continue these efforts as a valuable experience for students in underrepresented populations, and to support the hard-working staff and stakeholders at these locations.

## 13. Schools/districts receiving assistance:

See [OSPI's grantee list](#).

## 14. Program Contact Information:

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