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White Paper

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Potential Federal Funding Sources for Advancing Transportation Systems Management and Operations (TSMO) Workforce Development Activities

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Highlights

- The National Science Foundation, US Department of Labor, and US Economic Development Administration offer federal grant programs that are relevant to TSMO workforce research and program development activities.

- A key requirement for success in grant pursuits with these agencies is a strong partnership between academia and industry. Thus, conversations and planning should begin with interested partners very early to be ready for future submission opportunities.

- Additional funding opportunities are expected stemming from recent federal legislation, such as the Infrastructure Investment and Jobs Act, thus agency websites should be closely monitored for new programs relevant to TSMO.

IN THIS WHITE PAPER YOU WILL LEARN:

1. About a wide variety of non-DOT grant programs that TSMO workforce development activities could be supported by.

2. How TSMO could align with the funding sources to make for a compelling grant application.

3. About how important it is to develop relationships with academic, research, workforce, and economic development partners to build a compelling business case to be awarded grants.

Introduction

As the transportation systems management and operations (TSMO) landscape continues to evolve, greater investment is needed for workforce development activities. These investments include research related to skill and occupation shifts, education and training program development, and design of programs for attracting and developing diverse talent. There are numerous federal programs beyond the typically considered avenues of the US Department of Transportation and National Cooperative Highway Research Program that may provide funding opportunities. This technical memorandum summarizes relevant programs from the National Science Foundation, US Department of Labor, and US Economic Development Administration. Excerpts from solicitations highlight program objectives, funding level and cycle, and eligible applicants. Additional information is provided regarding the type of TSMO workforce activity that aligns with objectives for each program.

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National Science Foundation (NSF)

Congress created the National Science Foundation "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense…," in order to keep the United States at the forefront of scientific discovery. NSF funds basic research in all fields of science and engineering (except medical sciences) with a focus on generating new knowledge that will have significant impact.

FUTURE OF WORK AT THE HUMAN-TECHNOLOGY FRONTIER (FW-HTF)

Program Objective: The FW-HTF program is one of the 10 Big Ideas that are central to its funding mission. The program aims include:

- Understanding and developing the human-technology partnership,
- Designing new technologies to augment human performance,
- Illuminating the emerging socio-technological landscape and understand the risks and benefits of new technologies,
- Understanding and influencing the impact of artificial intelligence on workers and work, and
- Fostering lifelong and pervasive learning.

Funding Level: There are multiple types of grant opportunities through this program. Project Development Grants that fund planning activities for future larger-scale submissions are available with budgets of up to $150,000 and project timelines of 1 year. These grants are intended to stimulate research capacity through multidisciplinary team building and support initial activities related to exploring the work context, building collaborations with relevant stakeholders, and honing research gaps, questions, and hypotheses.

Research Grants are available at budgets of up to $2,000,000 and project periods of up to 4 years. Research grants are intended to advance fundamental understanding of the human-technology partnership in the context of future work, describing potential improvements to work, workplaces, workforce preparation, and work outcomes for workers and society. FW-HTF-R should incorporate knowledge, techniques, and expertise from multiple fields and sectors to create new and expanded frameworks for addressing the research goals.

Transition-to-Scale Grants allow requests of up to $4,000,000 for project timelines of up to 5 years. Projects in this category should build on previous research outcomes to create a new and extended knowledge base for deployment in future workplaces and contexts. Projects in this category should document factors that may enhance, moderate, or constrain the effects of innovations in work or work organization, approaches to worker learning, or the design of new human-technology partnerships.

All FW-HTF proposals must address the work context, integrative research across multiple domains, methods, measures, and metrics that will be used, and how access and inclusion in the workplace will be addressed through the project. Transition-to-Scale proposals must also demonstrate how previous research outcomes justify a scaled approach across multiple industries, geographic locations, or

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regional/national levels.

Funding Cycle: Annual basis. Most recent proposal due date of March 2, 2022, with similar timeline expected in future years.

Eligible Applicants: Institutes of higher education, non-profit, non-academic organizations: independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

TSMO Alignment: This program offers opportunities to develop in-depth research and generate new knowledge related to the ways in which technologies are currently and may in the future change the way TSMO work is performed. Research that develops inclusive strategies and practices for TSMO, such as for neurodiverse populations, is also relevant for this program. The funding is for research that can be translated and implemented in practice, including pilot-scale implementations that are studied as part of the research program. The program is not appropriate for straightforward activity or program development initiatives. It is recommended that state Departments of Transportation interested in pursuing a project through the FW-HTF program work with faculty at institutions of higher education with track records (personally or institutionally) of NSF funding.

Program Details: https://www.nsf.gov/eng/futureofwork.jsp

US Economic Development Administration (EDA)

The mission of the EDA is to advance the US economic development agenda by promoting innovation and competitiveness. Central focus areas of all EDA funding are increasing the number of new and better jobs, improving economic resiliency of communities, and fostering regional collaboration. EDA grants typically require cost matching at significant levels. There are multiple programs that provide annual opportunities. EDA also frequently releases new funding opportunities that address federal priorities. There are currently no open solicitations that are specifically relevant to TSMO. However, the STEM Talent Challenge (last offered in 2021) is described below, and similar programs appropriate for TSMO workforce development may be released in upcoming cycles. Funding opportunities can be monitored via the US EDA website: https://eda.gov/funding-opportunities/

STEM TALENT CHALLENGE
Program Objective: The STEM Talent Challenge aimed to build STEM talent training systems to strengthen regional innovation economies. Projects could include:

- Engagement of stakeholders to assess and forecast current and future talent needs to develop work-based programs

- Creating workforce pipeline programs that build highly skilled talent and connect talent to highly technical opportunities for continued advanced skills training

- Strengthening collaboration among industry, educational organizations, economic and/or workforce development organizations, and the public sector to enable better access to skilled workers and to develop demand-driven workforce pipelines for the innovation economy; and

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- Placing workers into immediate job openings with regional employers in need of STEM talent.

It is important to note that all EDA funding opportunities typically require documentation through letters of project support of municipal and/or state partners and alignment of the project with regional workforce development goals.

Funding Level: Up to $250,000 for 24 months. Matching (1:1) required.

Funding Cycle: Applications typically due annually in October.

Eligible Applicants: Eligible applicants included:
- States
- Indian tribes
- A city or other political subdivision of a State
- Nonprofit organizations
- Institutions of higher education
- Public-private partnerships
- Science or research parks
- A Federal laboratory
- An economic development organization or similar entity
- A consortium of any of the eligible applicants listed above.

TSMO Alignment: Programs such as the STEM Talent Challenge provide an opportunity for partnerships between State DOTs, institutes of higher education, private sector TSMO employers, and other workforce partners to create workforce development programs specific to TSMO and create pipelines to jobs.

Program Details: https://eda.gov/oie/stem/

US Department of Labor (DOL)

The mission of the US Department of Labor is to, 'promote and develop the welfare of the wage earners, job seekers, and retirees of the United States and…advance opportunities for profitable employment.' As such, the DOL offers numerous funding opportunities relevant to TSMO workforce development needs.

A memorandum of understanding (MOU) was signed between the US Department of Transportation and DOL in March 2022. The MOU highlighted the importance of the transportation and infrastructure workforce, accounting for more than 10% of American jobs. The intent of the MOU is to align initiatives between both agencies and leverage resources to improve job quality, access, and training opportunities and increase diversity of the transportation and infrastructure workforce. It is anticipated that a large transportation-focused funding opportunity will be released by DOL within the next year.

To read the MOU:
https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/2022/03/OSEC20220210.pdf

To monitor DOL grant opportunities: https://www.dol.gov/grants

GROWTH OPPORTUNITIES (REENTRY YOUTH)
Program Objective: Provides opportunities for justice-involved youth in communities with concentrated crime and poverty to enter paid work experiences, occupational education, leadership development, mentoring, and post-program employment or education.

Funding Level: Up to $2,000,000 for direct applicants and 4,000,000 for intermediary applicants. The period of performance is 42 months.

Funding Cycle: Annual applications are typically opened April and must be submitted by early October.

Eligible Applicants: Eligible applicants include:
- County governments
- Native American tribal governments (Federally recognized)
- Independent school districts
- Special district governments
- Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education
- City or township governments

TSMO Alignment: State Departments of Transportation have histories of developing workforce programs for formerly incarcerated adults. This DOL program creates an opportunity for earlier intervention and development of a workforce pipeline that could involve pre-apprenticeships, apprenticeships, and tracks to permanent employment. Because of the funding level for these awards, state-wide applications would be appropriate.

Program Details: https://www.grants.gov/web/grants/view-opportunity.html?oppId=336623

H1-B SKILLS TRAINING GRANTS
Program Objective: The H1-B Skills Training grants are funded through allocations from the H1-B visa application process. Programs under this umbrella target workforce development activities for occupations in high demand technical industry sectors (where often international workers must be recruited to fill US workforce gaps).

Eligible activities range from proof-of-concept pilots to training or apprenticeship program development. Central to all activities is public-private partnership.

Successful applications demonstrate local/state/regional need for occupations targeted by the proposed program and significant buy-in from a range of partners.

Funding Level: Funding level ranges from $500,000 to $10M (or more) per project, depending on the scale and impact of the proposed activities. The period of performance is generally 4 years. Examples of

recent funding opportunities include:
- H1-B Workforce Grant Program
- Apprenticeships: Closing the Skills Gap Program
- H1-B Scaling Apprenticeship through Sector-Based Strategies Program

Programs typically include significant cost matching requirements.

Funding Cycle: While there are no current relevant funding opportunities open, it is anticipated that there will be opportunities opening in 2023.

Eligible Applicants: Eligible applicants vary depending on program type, but typically include institutions of higher education, partnerships of public and private sector entities, non-profit trade, industry, or employer associations, labor unions, and workforce intermediaries.

TSMO Alignment: The H1-B Skills Training Grants provide the opportunity for a large-scale initiative to address TSMO workforce development needs in technical areas (either paraprofessional, professional, or both). Programs could be developed and piloted at smaller scale in the first year of the project, with replication occurring across a state (or states) in later years. Strong partnerships between education and public/private sector partners are essential.

Program Details: https://www.dol.gov/agencies/eta/skills-grants/h1-b-skills-training

STRENGTHENING COMMUNITY COLLEGES TRAINING GRANTS

Program Objective: These grants are designed to build capacity of community colleges to increase employment in specific industry sectors. The program also focuses on developing career pathway models that lead to rapid reskilling and reemployment in quality jobs. A central focus is building equity.

Eligible activities include hiring and training instructors, development of registered apprenticeships, purchasing classroom materials or equipment, developing comprehensive student supports, and curriculum development. Applicants need to demonstrate the industry focus is an in-demand sector with good quality job opportunities.

Funding Level: Awards range between $1,500,000 and $5,000,000. The period of performance is 48 months.

Funding Cycle: Annual applications are typically due in October.

Eligible Applicants: Community colleges are the only eligible applicant type, although this can be a single institution or consortium of institutions.

TSMO Alignment: State Departments of Transportation should partner with community colleges/systems to pursue this opportunity. TSMO does not have to be the sole focus- an application could be developed with multiple industry targets where TSMO workforce development is one component of the program.

Program Details: https://www.grants.gov/web/grants/view-opportunity.html?oppId=336701

Summary

There are a range of federal funding programs that may be a good fit for advancing the TSMO workforce development agenda. Funding programs are typically either research or workforce program development focused. Solicitations often target specific populations or allow applications from a limited set of entities. Agency websites should be monitored for new opportunities, particularly as funds from the Infrastructure Investment and Jobs Act continue to be programed by federal agencies.

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