

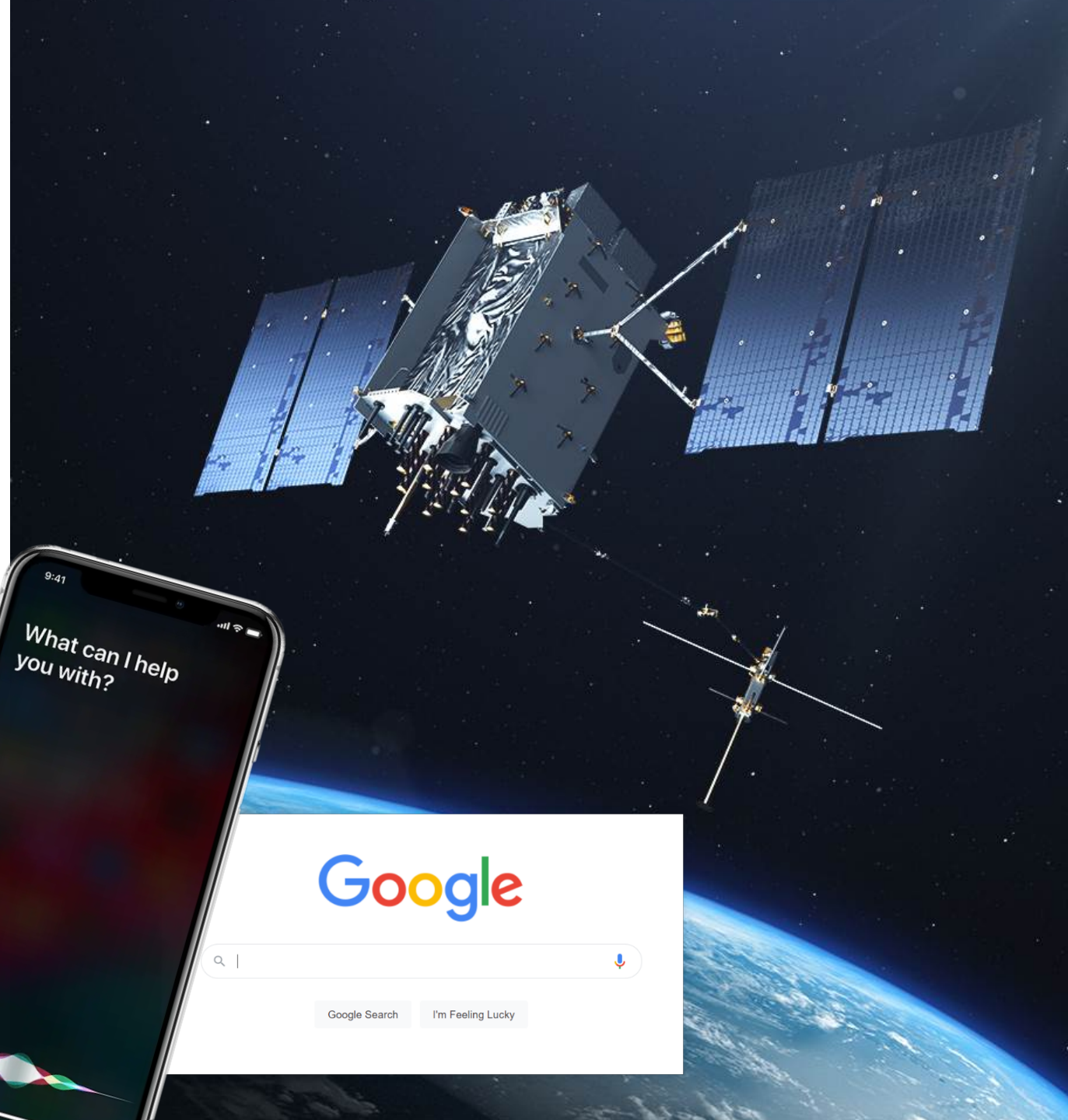
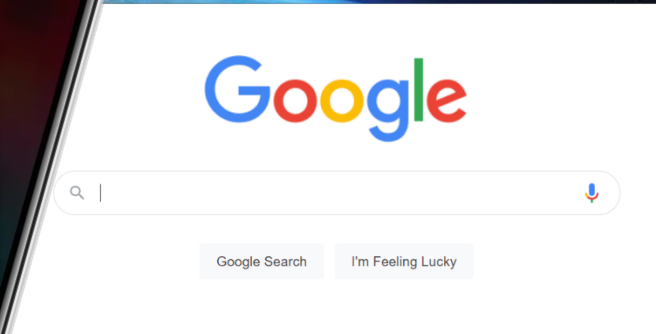
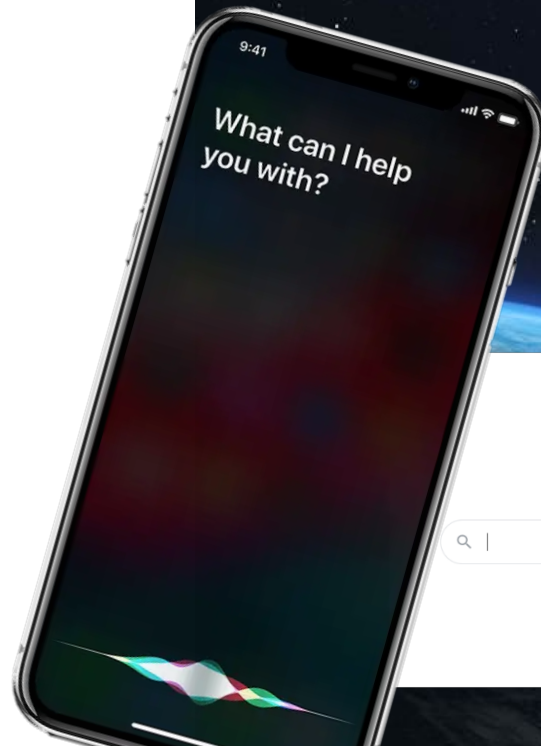
UMASS LOWELL RESEARCH INSTITUTE

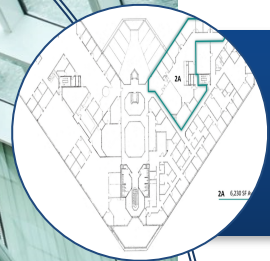
JANUARY 11, 2023



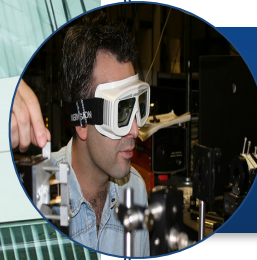


ENABLING THE DOD TO DRIVE THE NEXT TECHNOLOGY REVOLUTION





19k sq ft Modern Facility



Emerging Tech Hub & Accelerator



DoD & Innovator Events





OPERATING AT THE INTERSECTION OF TECHNOLOGY AND NATIONAL SECURITY

**Sparking Innovation, Connections & Collaboration
Among:**

- **New England Innovators and Venture Communities**
- **Local and Federal Partners**
- **All DoD Entities**
- **Academia**

Providing the Resources and Services You Need to Succeed

AGGRESSIVE CLIMATE GOALS


EXECUTIVE SUMMARY

In 2021, Governor Charlie Baker signed into law An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, which amends the Global Warming Solutions Act of 2008 and requires the Secretary of Energy and Environmental Affairs to set limits on greenhouse gas (GHG) emissions for 2025 and 2030, including both economy-wide emissions reduction requirements and specific limits on major sources of global warming pollution. These statutory limits must be accompanied by a comprehensive plan to achieve the required emissions reductions. As part of a letter issued contemporaneously with the Clean Energy and Climate Plan for 2025 and 2030 (2025/2030 CECP), the Secretary of the Executive Office of Energy and Environmental Affairs has determined that the Commonwealth's economy-wide emissions limit will be a 33% reduction from 1990 level in 2025, and a 50% reduction in 2030.

WORKFORCE REQUIREMENTS

ELECTRICAL ENGINEERS ARE NOT TRAINED ON CYBERSECURITY

Electrical and Electronics Engineers

PRINTER-FRIENDLY 

Summary **What They Do** Work Environment How to Become One Pay Job Outlook State & Area Data Similar Occupations More Info

What Electrical and Electronics Engineers Do

About this section 

Electrical engineers design, develop, test, and supervise the manufacture of electrical equipment, such as electric motors, radar and navigation systems, communications systems, or power generation equipment. Electrical engineers also design the electrical systems of automobiles and aircraft.

Electronics engineers design and develop electronic equipment, including broadcast and communications systems, such as portable music players and Global Positioning System (GPS) devices. Many also work in areas closely related to computer hardware.

Duties

Electrical engineers typically do the following:

- Design new ways to use electrical power to develop or improve products
- Perform detailed calculations to develop manufacturing, construction, and installation standards and specifications
- Direct the manufacture, installation, and testing of electrical equipment to ensure that products meet specifications and codes
- Investigate complaints from customers or the public, evaluate problems, and recommend solutions
- Work with project managers on production efforts to ensure that projects are completed satisfactorily, on time, and within budget

Electronics engineers typically do the following:

- Design electronic components, software, products, or systems for commercial, industrial, medical, military, or scientific applications
- Analyze customer needs and determine the requirements, capacity, and cost for developing an electrical system plan
- Develop maintenance and testing procedures for electronic components and equipment
- Evaluate systems and recommend design modifications or equipment repair
- Inspect electronic equipment, instruments, and systems to make sure they meet safety standards and applicable regulations
- Plan and develop applications and modifications for electronic properties used in parts and systems in order to improve technical performance


Electronics engineers who work for the federal government research, develop, and evaluate electronic devices used in a variety of areas, such as aviation, computing, transportation, and manufacturing. They work on federal electronic devices and systems, including satellites, flight systems, radar and sonar systems, and communications systems.



Electronics engineers analyze the requirements and costs of electrical systems.

CYBERSECURITY ANALYSTS ARE NOT TRAINED ON CONTROL SYSTEMS

Information Security Analysts

PRINTER-FRIENDLY 

Summary

What They Do

Work Environment

How to Become One

Pay

Job Outlook

State & Area Data

Similar Occupations

More Info

What Information Security Analysts Do

About this section 

Information security analysts plan and carry out security measures to protect an organization's computer networks and systems.

Duties

Information security analysts typically do the following:

- Monitor their organization's networks for security breaches and investigate when one occurs
- Use and maintain software, such as firewalls and data encryption programs, to protect sensitive information
- Check for vulnerabilities in computer and network systems
- Research the latest information technology (IT) security trends
- Prepare reports that document general metrics, attempted attacks, and security breaches
- Develop security standards and best practices for their organization
- Recommend security enhancements to management or senior IT staff
- Help computer users when they need to install or learn about new security products and procedures

Information security analysts are heavily involved with creating their organization's disaster recovery plan, a procedure that IT employees follow in case of emergency. These plans allow for the continued operation of an organization's IT department. The recovery plan includes preventive measures such as regularly copying and transferring data to an offsite location. It also involves plans to restore proper IT functioning after a disaster. Analysts continually test the steps in their recovery plans.


Information security analysts must stay up to date on IT security and on the latest methods attackers are using to infiltrate computer systems. Analysts need to research new security technology to decide what will most effectively protect their organization.



Information security analysts install software, such as firewalls, to protect computer networks.

CYBERSECURITY ANALYSTS ARE NOT TRAINED ON CONTROL SYSTEMS

Environmental Engineers

PRINTER-FRIENDLY 

Summary

What They Do

Work Environment

How to Become One

Pay

Job Outlook

State & Area Data

Similar Occupations

More Info

What Environmental Engineers Do

About this section 

Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They work to improve recycling, waste disposal, public health, and water and air pollution control. They also address global issues, such as unsafe drinking water, climate change, and environmental sustainability.

Duties

Environmental engineers typically do the following:

- Prepare, review, and update environmental investigation reports
- Design projects that lead to environmental protection, such as water reclamation facilities or air pollution control systems
- Obtain, update, and maintain plans, permits, and standard operating procedures
- Provide technical support for environmental remediation projects and for legal actions
- Analyze scientific data and do quality-control checks
- Monitor the progress of environmental improvement programs
- Inspect industrial and municipal facilities and programs in order to ensure compliance with environmental regulations
- Advise corporations and government agencies about procedures for cleaning up contaminated sites



Environmental engineers design systems for managing and cleaning municipal water supplies.

Environmental engineers conduct hazardous-waste management studies in which they evaluate the significance of a hazard and advise on treating and containing it. They also design systems for municipal and industrial water supplies and industrial wastewater treatment, and research the environmental impact of proposed construction projects. Environmental engineers in government develop regulations to prevent mishaps.

NEW JOB - INTEGRATED ENERGY MANAGEMENT

North American Industry Classification System (NAICS) Updates for 2022; Update of Statistical Policy Directive No. 8, Standard Industrial Classification of Establishments; and Elimination of Statistical Policy Directive No. 9, Standard Industrial Classification of Enterprises

A Notice by the [Management and Budget Office](#) on 07/02/2021



PUBLISHED DOCUMENT

AGENCY:
Office of Information and Regulatory Affairs, Office of Management and Budget, Executive Office of the President.

ACTION:
Notice of Solicitation of Comments on the Economic Classification Policy Committee's Recommendations for the 2022 Revision of the North American Industry Classification System; Update of Statistical Policy Directive No. 8, Standard Industrial Classification of Establishments; and Elimination of Statistical Policy Directive No. 9, Standard Industrial Classification of Enterprises.

SUMMARY:
The Office of Management and Budget (OMB) seeks public comment on the advisability of adopting the proposed North American Industry Classification System (NAICS) updates for 2022 recommended by its Economic Classification Policy Committee (ECPC), which comprises representatives of the Bureau of Economic Analysis, Bureau of Labor Statistics, U.S. Census Bureau, and other government agencies. The ECPC recommends an update of the industry classification system to clarify existing industry definitions and content, recognize new and emerging industries, combine industries, and correct errors and omissions. The ECPC also recommends an update of OMB Statistical Policy Directive No. 8, Standard Industrial Classification of Establishments, and to withdraw OMB Statistical Policy Directive No. 9, Standard Industrial Classification of Enterprises. In large part, this proposed series of revisions are

DOCUMENT DETAILS

Printed version:
[PDF](#)

Publication Date:
07/02/2021

Agency:
[Office of Management and Budget](#)

Dates:
To ensure consideration of comments on the adoption and implementation of the NAICS revisions detailed in this notice, please submit all comments in writing as soon as possible, but no later than 45 days from the publication date of this notice. Because of delays in the receipt of regular mail related to security screening, respondents are encouraged

Document Type:
Notice

Document Citation:
86 FR 35350

Page:
35350-35365 (16 pages)

Document Number:
2021-14249

DOCUMENT DETAILS

FEDERAL GRANTS ATTEMPT TO BRIDGE GAP

VIEW GRANT OPPORTUNITY FORECAST



FOA-ETA-23-31
DOL Building Pathways to Infrastructure Jobs Grant Program
Department of Labor
Employment and Training Administration

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NOTE: This is a Forecasted Opportunity.

General Information

Document Type: Grants Notice	Version: Forecast 3
Opportunity Number: FOA-ETA-23-31	Forecasted Date: Sep 30, 2022
Opportunity Title: DOL Building Pathways to Infrastructure Jobs Grant Program	Last Updated Date: Oct 04, 2022
Opportunity Category: Discretionary	Estimated Post Date: Nov 25, 2022
Opportunity Category Explanation:	Estimated Application Due Date: Jan 24, 2023 Applications must be submitted electronically no later than 11:59 pm Eastern Time.
Funding Instrument Type: Grant	Estimated Award Date:
Category of Funding Activity: Employment, Labor and Training	Estimated Project Start Date:
Category Explanation:	Fiscal Year: 2023
Expected Number of Awards: 25	Archive Date:
CFDA Number(s): 17.268 -- H-1B Job Training Grants	Estimated Total Program Funding: \$80,000,000
Cost Sharing or Matching Requirement: Yes	Award Ceiling: \$5,000,000
	Award Floor: \$500,000

Eligibility

Eligible Applicants: Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education
Others (see text field entitled "Additional Information on Eligibility" for clarification)
Public and State controlled institutions of higher education
Nonprofits that do not have a 501(c)(3) status with the IRS, other than institutions of higher education

Additional Information on Eligibility: See FOA, Section III, Eligibility Information, for further details.

Additional Information

Agency Name: Employment and Training Administration

Description: The purpose of the DOL Building Pathways to Infrastructure Jobs Grant Program is to fund public-private partnerships to develop, strengthen, and scale promising and evidence-based training models in H-1B industries and occupations critical to meeting the goals of the Bipartisan Infrastructure Law (BIL) and to maximize the impact of these investments. The United States (U.S.) will need a proficient workforce to fill the good-paying jobs created by this historic investment, and this grant program will train job seekers in advanced manufacturing; information technology; and professional, scientific, and technical services occupations that support renewable energy, transportation, and broadband infrastructure sectors. The DOL Building Pathways to Infrastructure Jobs Grant Program represents a down payment for the future skilled workforce needs that are being developed through the BIL investments by investing in the development and expansion of the workforce partnerships that will be needed to build equitable pathways to good infrastructure jobs. The Infrastructure Investment and Jobs Grant Program serves dual purposes by implementing and scaling worker-centered sector strategies to support the workforce necessary for successful implementation of the BIL. Applicants must choose one of the following tracks for this grant program: 1) Development Track: Developing and Implementing Local/Regional Worker-Centered Sector Strategy Programs; or 2) Scaling Track: Scaling Effective Worker-Centered Sector Strategy Programs. The goal of the Development Track is to use promising training models to invest in and establish local/regional partnerships that will implement sector-based training programs across one or multiple infrastructure-related sectors. This track will support equitable participation and growth of worker-centered sector-based training programs, particularly those serving rural and smaller communities and historically marginalized, underrepresented, and underserved populations. The goal of the Scaling Track is to scale an existing training model to the statewide or national level, that has shown demonstrated success in one infrastructure-related sector. This track will invest in statewide and national partnerships that will set the stage to enable support and growth in evidence-based worker-centered sector strategies. Both tracks require public-private partnerships to develop workforce training programs which

STATE GRANTS ATTEMPT TO BRIDGE GAP

The Challenge: Create Opportunities for Underserved Individuals in the Clean Energy Workforce

Those most impacted by climate change are typically excluded from opportunities to obtain employment in the clean energy sector due to systemic barriers and lack of training opportunities that lead to career pathways. As gaps in the workforce for climate-critical sectors grow, engaging underrepresented populations will be crucial, not just for equity, but also to ensure that the Commonwealth has the workforce needed to meet clean energy goals.

Status

Open

Award Potential

\$1,200,000

Application Deadline

March 20, 2023

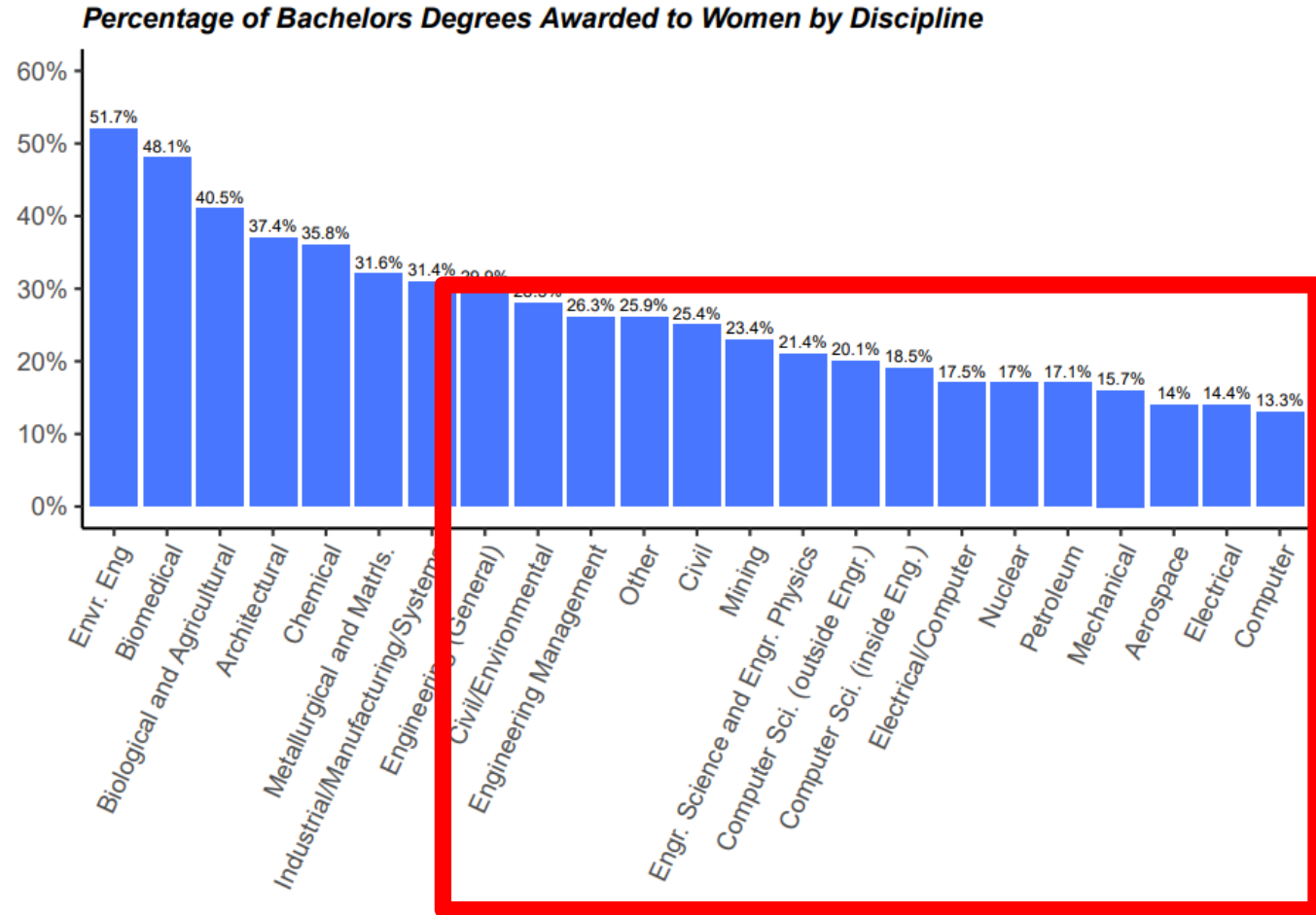
[Apply](#)

Questions?

[Contact](#)

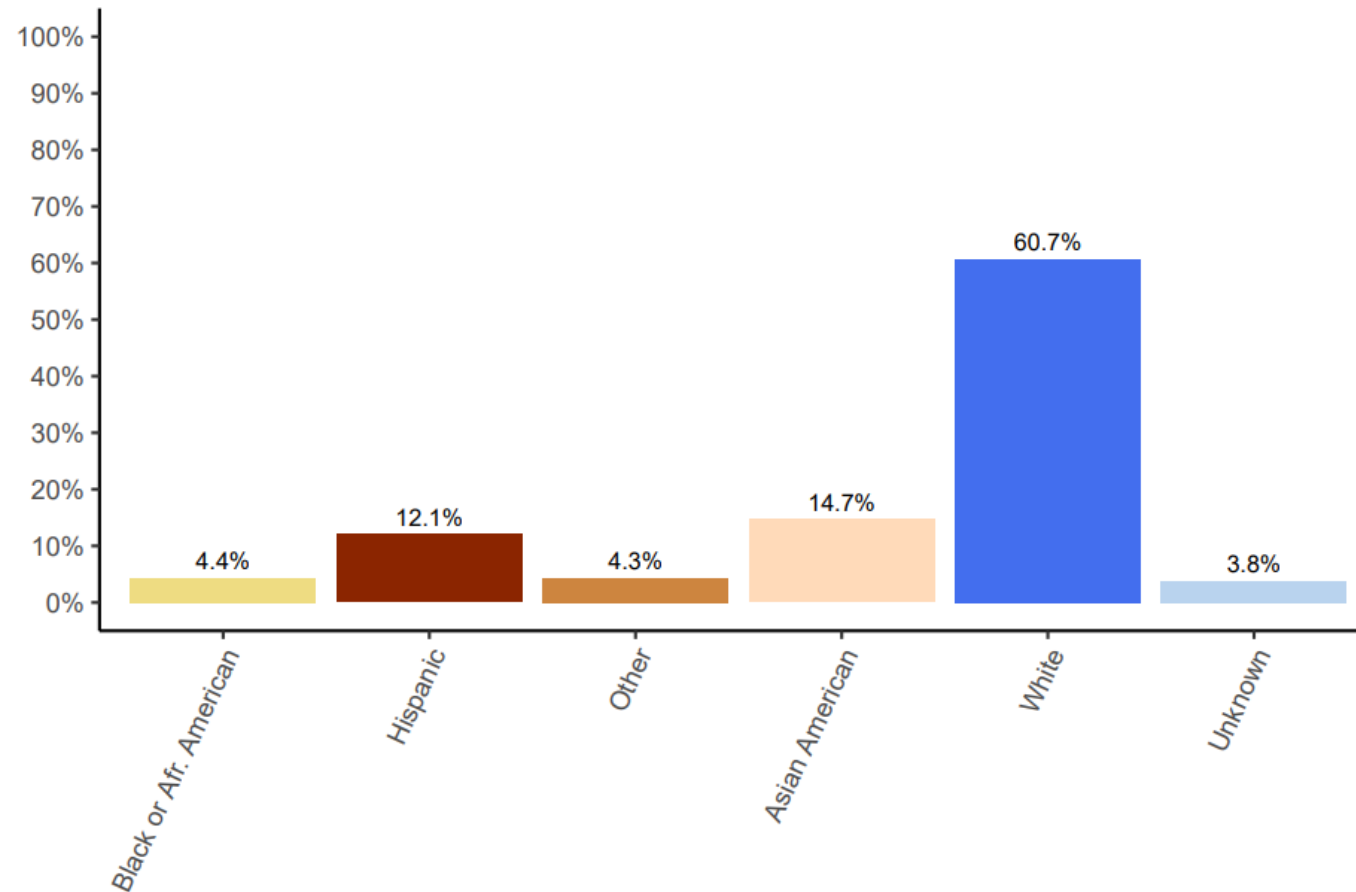
DIVERSITY REQUIREMENTS

CLEAN ENERGY ENGINEERING FIELDS LACK DIVERSITY



CLEAN ENERGY ENGINEERING FIELDS LACK DIVERSITY

Bachelors Degrees Awarded by Race and Ethnicity



AEE <> UML WORKFORCE COLLABORATION

Questions:

- How should UMass develop energy engineering workforce programming in partnership with AEE?
- How should we cultivate a community of engaged employers and students?

Email: alex_brickner@uml.edu

Phone: 847-275-5327

APPENDIX



ENHANCING HANSCOM'S MILITARY VALUE

COMMUNITY CYBER SUPPORT FACILITY (CCSF)

- Providing visibility into infrastructure risks that could impact installation mission assurance
- Facilitating cyber mutual aid through a cyber workforce in secure facilities
- Providing secure facilities for collaboration with local defense and small business community
- Opportunities for research in areas such as: securing defense critical infrastructure with a community cyber force



Coming Fall 2023



Funded By:

U.S. Department of Defense
Office of Local Defense
Community Cooperation



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