



**Academic
Data Science
Alliance**

Ms. Kelli Ann Burriesci
Acting Undersecretary
Deputy Undersecretary
Office of Strategy, Policy and Plans
Department of Homeland Security

August 2, 2021

Dear Ms. Kelli Ann Burriesci,

The Academic Data Science Alliance (ADSA) represents a community of academic data science leaders, practitioners and educators. ADSA has a mission to build communities of and support for existing and emerging data science degree programs, departments, and institutes in higher education. As with many new fields of study, data science has seen rapid growth that has tended to outpace regulatory change. **One area of concern that ADSA members have raised is the absence of the new 30.7001 Classification of Instructional Program (CIP) code for data science programs from the official STEM Designated Degree Program list.**

In 2020, the National Center for Education Statistics (NCES) updated the list of CIP codes for academic programs. We are very supportive of the creation of a new code, 30.7001, for “data science, general.” The creation of this new CIP code recognizes the importance of data science as a discipline and the rapid increase in new data science undergraduate and graduate programs at many colleges and universities across the nation. Unfortunately, the absence of the 30.7001 code on the Department of Homeland Security’s STEM Designated Degree Program list affects the eligibility of international students with F-1 visas to extend employment in the United States, via the STEM OPT program, for an additional 24 months beyond the standard 12-month time period granted by the OPT program. Programs with the 30.7001 code will be at a competitive disadvantage in recruiting international students. More importantly, international students in essentially equivalent programs with similar learning goals and curricula will be provided substantially unequal post-graduation training opportunities solely because the 30.7001 code is absent from the STEM Designated Degree program list.

We request that the Department of Homeland Security consider inclusion of CIP code 30.7001 for the STEM Designated Degree Program list. The learning goals of 30.7001 programs fit very well with the mission of the STEM list; moreover, the learning goals of 30.7001 programs are a combination of

learning goals from other STEM classified CIP codes including computer sciences, statistics and mathematics.

Two arguments make the case for inclusion of CIP code 30.7001 in the STEM Designated Degree Program. First, the learning goals of data science fit the mission of the STEM Designation Programs List. As defined by DHS under 8 CFR 214.2(f)(10)(ii)(C)(2), a STEM field of study is one “included in the Department of Education’s Classification of Instructional Programs taxonomy within the two-digit series containing engineering, biological sciences, mathematics, and physical sciences, or a related field. In general, related fields will include fields involving research, innovation, or development of new technologies using engineering, mathematics, computer science, or natural sciences.”

Importantly the DHS explains that the STEM list can also contain selected 6-digit CIPs from an additional CIP series, including the (30) Multi/Interdisciplinary Studies.

Data science is a related field in the (30) series that involves research, innovation and development of new technologies involving computer sciences, statistics, and mathematics. The National Academies 2018 report defines data science as a field of study that is composed of “information technology, computer science, statistics, mathematics, operations management, and business analytics” (pg 7). It explains that data science involves “principles for data collection, storage, integration, analysis, inference, communication, and ethics” (pg 7). It recommends data science students develop knowledge in areas including “computer science, statistics, business analytics, information technology, optimization, applied mathematics, and numerical computing” (introduction).

Second, the key areas of instruction defined by the 30.7001 code are a combination of knowledge from other STEM classified CIP codes. The NCES defines general data science programs (30.7001) as focusing “... on the analysis of large scale data sources from the interdisciplinary perspectives of applied statistics, computer science, data storage, data representation, data modeling, mathematics, and statistics.” The key disciplines from which data science borrows perspective, as defined by 30.7001, are represented in the STEM Designated Program list: applied statistics (27.0601), computer science (11.0701), data processing (11.0301), data modeling (11.0302), mathematics (27.0100), and statistics (27.0501). Other disciplines which contribute to data science, according to the National Academies of Science definition, are also included in the STEM list: operations management (14.3700), business analytics (52.1302), information technology (11.0103), and applied mathematics (27.0301).

As data science is an interdisciplinary field of study composed overwhelmingly of STEM areas of knowledge, then data science should also be considered a STEM field. **In summary, we request that the Department of Homeland Security consider inclusion of CIP code 30.7001 for the STEM Designated Degree Program list.**



Respectfully,

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Sources:

(2021) DHS STEM Designation Programs List

<https://www.ice.gov/sites/default/files/documents/stem-list.pdf>

(2018) National Academies of Sciences, Engineering, and Medicine 2018. Data Science for Undergraduates: Opportunities and Options. Washington, DC: The National Academies Press.

<https://doi.org/10.17226/25104>.

(2020) The National Center for Education Statistics (NCES) Classification of Instructional Programs CIP 2020 codes for instructional programs

<https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?v=56&cipid=92953>).

