University Senate

Proposed: April 29, 2016

Adopted: By voice vote with no dissent;
51 of 100 senators present

**RESOLUTION TO ESTABLISH AN M.S. IN DATA JOURNALISM (JOURNALISM)**

WHEREAS, data journalism encompasses various ways of collecting, analyzing, visualizing, and publishing data for journalistic purposes, including the use of spreadsheets, database managers, or statistical programs to analyze data from public records or other sources, and the use of algorithmic techniques such as machine learning or topic modeling to find stories in unstructured text, and

WHEREAS, today's journalists may build interactive data visualizations for the web or present their findings in data, text, and visual packages for web or mobile audiences, and

WHEREAS, the School of Journalism has incorporated data and computation courses for more than a decade, but sees a demand for more advanced training for journalists, and

WHEREAS, the proposed program adds to the regular journalism sequence a full-time summer intensive introduction to data science and computation modeled on the school's established non-degree postbaccalaureate program in data science, and

WHEREAS, there is considerable demand both from aspiring journalists and from prospective employers for reporters with data and computational skills, and

WHEREAS, there are few comparable offerings in the metropolitan area or the Northeast, and

WHEREAS, the new program will ensure that Columbia is a leader in the application of data and computation in this rapidly developing and increasingly visible subfield of journalism,

NOW, THEREFORE, BE IT RESOLVED that the Senate approve the Master of Science in Data Journalism.

BE IT FURTHER RESOLVED that the Education Committee review the program in five years.

Proponent: Education Committee

**1) Purpose**

1. **Describe the purpose of the proposed program and the professional and educational assumptions that underlie it.**

   The M.S. in Data Journalism is designed to prepare students to use data, coding, and emerging media to find and tell stories in the public interest. Data Journalism, sometimes referred to as computational journalism, encompasses a broad suite of practices for collecting, analyzing, visualizing, and publishing data for journalistic purposes. Examples include what newsrooms call "computer-assisted reporting," in which journalists may use spreadsheets, database managers, or statistical programs to analyze data from public records or other sources and then report their findings in prose. Journalists with programming skills may also use algorithmic techniques like machine learning or topic modeling to find stories in large amounts of unstructured text. They may also build interactive data visualizations for the web or create news applications that present their findings in data, text, and visual packages for web or mobile audiences.

   By offering training in this suite of practices, the M.S. in Data Journalism aims to fill some gaps in both journalism education and the journalism profession, including: 1) a shortage of journalists capable of using data and computation in their reporting, 2) the scarcity of programs designed to train students in these skills, and 3) the lack of curricular and teaching resources that would allow students to achieve a higher level of mastery in data and computational skills.

   Students in this program will develop both technical mastery and journalistic acumen in the course of three semesters — one semester more than the existing M.S. Journalism degree. As it stands, most students enter the Journalism School with little or no journalism experience and so must learn both technical skills and reporting skills simultaneously. The pedagogical advantage of this new degree is that it will teach technical skills during the summer semester so that students are prepared to apply those skills throughout the regular school year in their reporting projects and ultimately their master's theses.

   Researchers from the Journalism School recently completed a year-long study of data and computational journalism education with the help of a grant from the Knight Foundation (report excerpted in Appendix C). The dual purpose of this study was to survey the state of data journalism education and to produce a model curriculum that could guide other journalism educators in developing their own programs in this field. The study was also guided by a committee of leading educators and practitioners of data and computational journalism (listed in Appendix B). This new degree proposal is informed by the findings of that study, which involved assessing current needs in the

journalism profession, evaluating existing computational and data journalism programs, and drafting model curricula for courses and degree programs that incorporate data and computational methods in journalistic practice.

This proposal is also guided by the School's experience in teaching data and computation to students, including a data concentration in its M.S. program and a summer certificate course called the Lede Program, which we began offering in 2014.

Unlike the traditional M.S. in Journalism, this new degree is intended to be coded as a STEM program because it involves the teaching of data science, computer programming, and related technical skills in the context of journalism and the news media. The new degree should be placed in the category of "Digital Communication and Media/Multimedia" (CIP code 9.0702). The category is defined as follows:

> A program that focuses on the development, use, critical evaluation, and regulation of new electronic communication technologies using computer applications; and that prepares individuals to function as developers and managers of digital communications media. Includes instruction in computer and telecommunications technologies and processes; design and development of digital communications; marketing and distribution; digital communications regulation, law, and policy; the study of human interaction with, and use of, digital media; and emerging trends and issues.

**2) Need**

1. **Describe the need that the proposed program is designed to meet.**

Our research on the state of journalism education found that nearly half of the 113 journalism programs accredited by the Association of Educators in Journalism and Mass Communication (AEJMC) have no instruction at all in data skills. Only 11 offered any coursework in computational methods or other emerging techniques. This indicates that the general state of journalism education is out of sync with newsroom hiring demands, which increasingly favor graduates who are able to report with data and computational methods.

As a study published by the School's Tow Center for Digital Media said: "Data journalists are in demand today throughout the news industry and beyond. They can get scoops, draw large audiences, and augment the work of other journalists in a media organization or other collaboration."

Many other news organizations – whether they are startups or legacy brands – are investing more resources in data journalism. In 2014, The New York Times started a new

section called The Upshot, which is devoted to data about public life. In the same year, ESPN launched FiveThirtyEight, a news site that provides data analysis. The Journalism School's Career Services department can barely cope with the inquiries from prospective employers looking for graduates with data and computational skills.

There is also substantial demand for data instruction from students. In the 2015-2016 school year, we received 70 applications, accepted 39, and enrolled a class of 21 students to study data journalism. Between our MA and MS programs, 37% of our student body will choose to take a data class at some point during their education.

2. **Have you received requests for the program? If so, describe the reasons for those requests and who made them.**

   Although no specific requests have been made for a separate degree, the new M.S. in Data Journalism will be an improvement (as explained above) over the popular and selective data journalism concentration in the M.S. Journalism degree. The School did not advertise this data concentration, and yet the number of applications for it has exceeded some of our M.A. concentrations.

3. **Do other institutions in the metropolitan area and in the Northeast offer similar programs? If so, describe how the program differs from those at the other institutions.**

   Degree programs in data and computational journalism are quite rare at this time. Several institutions in the New York metropolitan area and Northeast region offer one or two courses in data journalism, but not a standalone degree. These include the City University of New York, New York University, the New School, Boston University and Temple University. Only Syracuse University offers a standalone master's degree in Computational Journalism. (Note: The terms "computational journalism" and "data journalism" are often used interchangeably. They refer to essentially the same suite of practices involving data acquisition, data analysis, and using statistical tools and programming languages to analyze and present information.)

   Given that several other fields, like Statistics and Data Science, also offer instruction in the use of data, it is worth noting that our program will be distinguished by its focus on journalistic values and practices. Some reporters have been using computers and databases for several decades, and it is not uncommon for exceptional examples of this work to be awarded the Pulitzer Prize. The M.S. in Data Journalism will be guided by this tradition of quality work as well as the considerable potential for innovation in the application of data and computational methods in journalism.