Public Interest In Technology: Enabling the Next-Gen Engineer With Project Management Skills for the Public Sector – A Community College Case Study

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The purpose of this paper is to document our pedagogical approach for introducing the community college student to the important and growing field of applying their engineering and engineering technology skills for the good of the "Public Interest", otherwise known as *Public Interest in Technology*. Founded by the Ford Foundation and co-founded by 18 Universities across the country (including MIT, Harvard, City University of New York, etc.), the mission definition can be stated as "Public Interest Technology adopts best practices in human-centered design, product development, process re-engineering, and data science to solve public problems …. improving, and aiming to deliver better outcomes to the general public and the public service sectors".

With technology continuing its unprecedented barrage into every aspect of society, one (of many) consequence has been to enabled high levels of power and influence by the individual stakeholders in these technology products and disciplines. Specifically, technology (data mining, AI, etc.) has enabled data-driven transformations to new levels of automated decision-making, thereby increasing the undeniable power of data use for public good and or potentially for harming the general public. Examples include data-driven tiered pricing schemes for consumers based on real-time, auto-collected personal data, to algorithms run by insurance health carriers which may auto-disqualify a patient from certain treatment or benefits, especially for the underprivileged communities

Therefore, Public Interest in Technology advocates the need for engineers and technologists to augment their professional skills to be explicitly concerned with issues of social, political, and general public good. With this in mind, we created (via RF CUNY grant) a series of Learning Modules complete with laboratory and field visit activities to expose our students to the importance of Public Sector Service (Construction, Municipalities, Non-Profit R&D sectors, Transportation, etc.) in the area Project Management, and Technology Ethics, with specific emphasis on serving the Public Sector.

For first year engineering introductory courses, we selected classes that are intentionally designed to guide the student through the engineering profession with the usual emphasis on private sector employment opportunities, including several niche sectors in healthcare, power, transportation, electronics, optics, robotics and mechatronics.

In this paper, we developed new subject matter to indoctrinate the student to Project Management (PM) training, consisting of 6 modules and four unique laboratory & field visit exercises. The modules are supported with case studies, both via field visits, and in-class simulations. Field visits are varied according to the student learning objectives, varying from municipal assembly person meetings, to visiting NYC's ground zero public service providers in planning and construction.

The purpose of these field visits is for experiential, authentic real-life exposure to working in the public sector to augment communication skills, and to demonstrate the added value of project management skills to specific, applicable public work projects at many levels, especially those levels or sector services that need it most in day to day operations. The modules use a strong student-centered syllabus, complete with software scheduling tools, basics of schedule management using critical-path methods, and were approved for OER distribution in CUNY. Project management is a ubiquitous skill set imperative to private and public sectors. All the material is targeted for public sector applications, and to date, student evaluations via early survey's and field visit scenario considerations, has resulted in student expansion of mindset on the importance on student career self-satisfaction, and renewed sense of empowerment, and not to overlook the benefits of public service employments comparted to the private sector.