

## **CONSTRUCTING A TAXONOMY FOR CAREER OUTCOME REPORTING**

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Broadening Experiences in Scientific Training Consortium

All universities face the challenge of tracking and reporting the career outcomes of their graduate and postdoctoral alumni. In today's complex world economy, where PhD-trained scientists are found in an increasingly diverse array of careers, institutions and organizations have independently struggled to create an intuitive, comprehensive, and replicable taxonomy that succinctly and unambiguously describes the career outcomes of their alumni. Due to the lack of a commonly adapted language, national and international career outcome data cannot be effectively mined, compared, or evaluated and the potential impact of such data collection efforts is drastically reduced. To address that challenge, the 17 universities of the Broadening Experiences in Scientific Training (BEST) Consortium have pooled their collective experience to develop a taxonomy of career outcomes that can be used by all consortium members, and could be offered to the national and international community for broader adoption.

The resulting career outcomes taxonomy is two-tiered: It first prompts selection of a broad labor sector (Academic, Government, For Profit, Nonprofit, and Unknown) and second, assigns career paths into 20 specialized job functions based on specific skillsets and/or credentials required for employment in that function. We anticipate that this taxonomy is sufficiently robust to be useful in many practical applications, for example in alumni surveys and internal administrative classification. To accompany the taxonomy, we will develop a software platform to facilitate visual representation of collected career outcome data for use in publications and on websites. Clear representation of the data will permit potential graduate students or postdoctoral candidates to easily compare the longitudinal career outcomes between institutions and include that information in their decision-making process.

Through the collaborative strength of working as a Consortium, we were successful in developing a model that can now be tested through empirical and discursive processes. We hope that institutional and organizational leaders beyond the BEST Consortium will consider the utility of this taxonomy and that it may seed broader conversations regarding how and why institutions should disclose career outcomes data.

## Sector

	<b>SECTOR</b>	<b>Examples of Institutions</b>
I.	Academia	Any academic institution (elementary through post-graduate education)
II.	Government (State, Federal, and Foreign)	Examples may include: NIH, national labs, state labs, FDA, DOD, NSF, NASA, DOE, NIST
III.	For Profit	Any organization that operates to make profit. Examples may include: industry research, start-up companies, corporations, firms, publishing houses.
IV.	Nonprofit (excluding Academic or Government)	Any organization that is not designed to make a profit. Examples may include: some non-academic research centers, public or private museums, outreach organizations, non-government policy organizations, national associations, non-governmental or religious organizations.
V.	Other	Full-time homemakers, unemployed.
VI.	Unknown	For administrative use only.

## Job Function/Role

<b>JOB FUNCTION</b>	<b>Detailed Definition</b>	<b>Examples of Job Titles</b>
Administration	Administrative-intensive roles in an institution/company. Examples include: faculty affairs, graduate program administrators, human resources, academic admissions, career development offices, grant and contracts management, research development, PhD-level program development, and similar.	Program Manager or Director, Assistant/Associate Director, Dean, Manager, Specialist, Assistant/Associate Vice President for Research
Business Development, Consulting, and Strategic Alliances	Role that involves the development, execution, management, or analysis of a business. Role may include relationship management, refinement of operational efficiency, or fee-based advisory services. Examples include: management consultant, business development professional, market researcher, investment analyst, venture capitalist.	Director, Consultant, Manager, Analyst, Project Controller, Team Lead
Career that is not directly related to science	Role that does not require scientific training or involve the direct implementation or communication of science. Examples include: full-time homemaker, chef, food or hospitality services, some types of military service or mission work, currently unemployed.	

Clinical Research Management	Role that is responsible for the oversight, management, or design of clinical research trials. Examples include: clinical research project/trials manager or coordinator.	Academic Research Manager, Clinical Trials Manager, Program Lead, Associate, Specialist, Project Manager
Clinical Services	Role that involves that administration of clinical services or research. Examples include: genetics counselor, testing specialist, clinical laboratory staff.	Anesthetist, Assistant/Associate Director of Clinical Chemistry Lab, Pharmacology Director, Clinical Operations Specialist
Completing additional professional training	Role that is considered additional training for a professional career. This is <i>not</i> a terminal career position and usually results in graduation or advancement to permanent role.	Postdoctoral Scientist, Fellow, Trainee, Advanced Degree Student in law, public health, business, medicine, etc.
Data Science, Analytics, and Software Engineering	Role that may combine programming, analytics, advanced statistics, data communication, and/or software development.	Analyst, Data Scientist, Analytics Consultant, Analytics Officer, Director, Data Architect, Business Intelligence, Software Engineer/Developer
Entrepreneurship	Role that develops, manages, and provides/obtains capital to initiate a business or enterprise. This function does <i>not</i> include staff at a start-up business.	Founder, Co-Founder
Intellectual Property and Law	Role that involves the curation, management, implementation or protection of intelligence and creation, including trademarks, copyrights, patents, or trade secrets. Examples include: patent agent, patent attorney, technology transfer specialist.	Patent Agent, Associate, Assistant, General Counsel, Attorney, Coordinator, Technology Transfer Specialist
Physician	Role where the primary responsibility is providing medical care.	Resident, Attending, Chief
Regulatory Affairs	Role that involves controlling or evaluating the safety and efficacy of products in areas including pharmaceuticals, medicines, and devices. Examples include: institutional regulatory affairs professional, quality control specialist, compliance officer and similar.	Specialist, Consultant, Assistant/Associate Director, Associate, Coordinator, Officer
Sales and Marketing	Non-technical role that is related to the sales or marketing of a science-related product or service. Examples include: medical science liaison, technical sales representative, marketing specialist.	Account Manager, Assistant/Associate Product Director, Sales Specialist
Science Policy and Government Affairs	Role that involves policy or program development and review, including analysis, advisory, or advocacy. Examples include: public affairs or government affairs staff at scientific societies, foundations, government entities, or think tanks.	Policy/Program Analyst (science, health), Science Advocate, Scientist, Science/Health Advisor, Campaign Worker

Science Writing and Communication	Role that involves the communication of science-related topics. Examples include: science, medical, or technical writer, journalist, science editor, science publisher.	Communications Director, Press Liaison, Editor, Grant Writer, Communications Consultant
Technical Support and Product Development	Role that requires specialized technical knowledge of a science-related product. Examples include: technical support specialist, field application specialist, product development scientist or engineer.	Technical Lead, Technical Applications Specialist or Scientist, Technical Services Scientist
Science Education and Outreach	Role that involves K-12 education or public outreach at a primary/secondary schools, science museum, scientific society, or similar.	High School Teacher, Science Specialist, Curriculum Developer
Combined Research/Teaching	Role that includes both research and major teaching responsibilities.	Academic Professional, Assistant/Associate/Full Professor, Adjunct Instructor, Instructor
Teaching-Intensive	A primarily teaching position with minimal or no research duties. This function does <i>not</i> include K-12 teaching or outreach roles.	Instructor, Lecturer, Assistant/Associate/Full Professor, Academic Professional
Research Staff or Technical Director	Research-intensive role that may involve management of a laboratory, group, or facility but is <i>not</i> directly responsible for procuring funding for a research group. Examples include: staff scientist or researcher, lab manager, director of a multi-user research facility or core laboratory.	Non-tenure track Faculty, Assistant Investigator, Assistant Specialist, Automation Specialist, Core Director, Research Manager, Research Associate, Staff Scientist
Principal Investigator or Group Leader	Role in a research-intensive environment that includes minimal or no teaching duties and is responsible for procuring/managing a research budget.	Assistant/Associate/Full Professor, Group Leader, Investigator, Research Professor
Unknown		

**NOTE TO READER:** The working group that developed this taxonomy is very interested in your feedback on its structure, content, and suitability for your needs. If you would like to take part in the national conversation around this topic or have questions about the taxonomy project, please use this survey form: [http://uchicago.co1.qualtrics.com/jfe/form/SV\\_0TEsqBLe5WCQVkp](http://uchicago.co1.qualtrics.com/jfe/form/SV_0TEsqBLe5WCQVkp) . We hope to collect feedback during Summer 2017 and will reconvene in Fall 2017 to consider and incorporate comments.

We appreciate your time!

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