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ORCID @ CMU: Successes and Failures

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ORCID @ CMU: Successes and Failures

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Abstract

Setting and Objectives: Carnegie Mellon University (CMU) recently planned and implemented a project to help CMU researchers get an Open Researcher and Contributor Identifier (ORCID) and to enable administrators to integrate the ORCIDs into university systems. This article describes and assesses the planning, performance, and outcome of this initiative, branded ORCID @ CMU.

Design and Methods: The article chronicles why and how ORCID was integrated at CMU, including the rationale for changes in strategic plans. It assesses researcher participation in the project using transaction log and content analyses, and the performance of the ORCID project team using recommendations in the Jisc ORCID project report, frankly reporting the team's successes and failures. The article concludes with lessons learned that should inform ORCID integration projects and expectations at other institutions.

Results: The ORCID @ CMU web application was a great success. However, the project team did not allow enough time to prepare or devote enough attention to advocacy. The marketing message was not sufficiently persuasive and the marketing channels were not particularly effective. The overall participation rate in ORCID @ CMU was far below the target of 40%, though participation in many demographics exceeded the goal.

Conclusions: Strategic planning does not guarantee success. Secure more than lip service from senior administrators. Recruit champions from across the institution. Develop a message that resonates with researchers. Allow sufficient time to prepare. Empower the project manager. Start with the low hanging fruit. Develop special outreach to doctoral students and postdocs.

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What is ORCID and Why is it Necessary?

ORCD stands for Open Researcher and Contributor Identification. An ORCID is a unique persistent identifier for researchers. ORCID is also the name of the non-profit organization that mints the IDs and manages the OCID Registry. Unlike other researcher identifiers, ORCIDs are non-proprietary and platform- and genre-independent. They can be embedded in workflows and used to link researchers to their sponsors, collaborators, and work products, including datasets, blogs, code, and peer reviews. ORCIDs and ORCID Registry records provide new opportunities for researcher recognition and system interoperability that can facilitate needed reforms in scholarly communication.

Worldwide, stakeholders in the scholarly enterprise are increasingly integrating ORCID into their workflows. Publisher integrations enable, for example, prepopulating author information during manuscript submission (e.g., Nature Publishing Group, Biomed Central) and real-time updating of author publication lists in ORCID Registry records (e.g., CrossRef, DataCite). In August 2015, the Wellcome Trust started requiring researchers to have an ORCID. Other funders and eventually publishers are expected to follow this lead. Universities are also embedding ORCIDs into campus systems and workflows (Henderson, Johnson & Woodward 2015).

In 2013, the Alfred P. Sloan Foundation Adoption and Integration Program (the A&I Program) funded nine projects to integrate ORCID, document use cases, develop open source code, and disseminate best practices. The funded integrations varied, but all aimed at increased recognition of researchers and increased efficiency in the scholarly ecosystem. Achievements under this program include the University of Notre Dame's integration of ORCID into the Fedora Hydra repository platform (University of Notre Dame 2014), Boston University's creation and integration of ORCIDs into their Profiles system (Boston University 2014), and Texas A&M University's integration of ORCIDs into their electronic theses and dissertations workflow, institutional repository, and campus directory (Texas A&M University 2014).

Like the A&I Program participants, Carnegie Mellon University (CMU) administrators struggle to accurately and efficiently identify and track researchers, as well as their works, collaborators, and grants. Identification and tracking are critical to monitoring compliance with funder mandates and benchmarking research productivity and impact. Name ambiguity complicates these activities. CMU researchers also lament problems in the system, from functional inefficiencies to bias. They want to generate automatically the list of citations for their CV, reduce redundant activities, and obtain credit for contributions and products not currently recognized by an academic world focused on authors, articles, and books. ORCID is an important component of the solution to these problems.

Carnegie Mellon has a history of embracing innovations that support its mission to create and disseminate knowledge. CMU Libraries serves that mission, endeavoring to provide needed resources and services, to expand the reach and recognition of CMU work, and to solve exigent problems in the scholarly enterprise. In response to Faculty Senate resolutions urging CMU researchers to make their work available via open access and urging the university to create an open-access institutional repository for CMU work, the Libraries implemented an institutional repository and created a fund to help CMU researchers pay levied fees to publish open access. We provide scholarly communication and data management services, support

new business models to increase access to scholarly work, and on behalf of the university, endorse important statements driving needed changes, including Force11's Data Citation Principles (Data Citation Synthesis Group 2014). Integrating ORCID at CMU is a natural next step in addressing issues in the landscape.

Timeline

April 2014	The Research Data Management Executive Committee approves an ORCID integration at CMU.
June	The Library Policy and Planning Group (LPPG) approves a project to create ORCIDs for CMU researchers; researchers can opt-out. Plans include a pilot with the College of Engineering, followed by a university-wide project proceeding college-by-college.
August	Plans change from an opt-out to an opt-in program, creating an ORCID or capturing a pre-existing ORCID at the researcher's request.
October	ORCID @ CMU web application tested and web page published.
November	Launch of the pilot project with the College of Engineering. LPPG adds all liaison librarians to the ORCID team for the university-wide project and approves revised assessment criteria precipitated by the change to an opt-in project.
January 2015	Plans change from a college-by-college approach to a university-wide campaign. Support from the university President enables branding the project as a university, rather than a library initiative.
February	The Office of Research Integrity and Compliance commits to integrating ORCID into the new Sponsored Programs and Research Compliance System to facilitate communication with project sponsors. CMU Libraries commits to integrating ORCID into the new repository platform being developed to facilitate discovery and recognition of CMU work.
March	Launch of the university-wide campaign.
July	ORCID @ CMU is integrated into the onboarding process for new faculty and graduate students.
October	Following the best practice established in the A&I Program, the ORCID @ CMU web application becomes freely available on Github.

ORCID @ CMU: Strategic Planning

The impetus to integrate ORCID at Carnegie Mellon arose within the interdepartmental Data Management Services Group (DMSG) charged with recommending and guiding activities and policies to support the research data lifecycle at CMU. The DMSG saw ORCID as a way to recognize CMU researchers who shared their data, facilitate communication with research sponsors, and enhance the functionality of the institutional repository.

The DMSG reports to the Research Data Management Executive Committee, which provides governance and approves policies and procedures for research data management at CMU. In April 2014, the DMSG[1] met with the Executive Committee,[2] briefly reported on the A&I Program use cases, and proposed an ORCID integration at CMU to support author identification and facilitate communication and interoperability with external parties. The Executive Committee enthusiastically approved a project to create ORCIDs for CMU researchers and to integrate ORCID into campus systems. The members understood that broad adoption of ORCID would facilitate compliance monitoring and benchmarking and increase efficiency in myriad ways. Looking ahead, the Committee chose a Premium membership in ORCID to enable the university to integrate ORCIDs into multiple systems and to synchronize data and track interactions between institutional systems and ORCID.[3]

The Dean of Libraries assigned the Scholarly Communications Librarian to serve as ORCID project manager and secured support from the Associate Dean of the College of Engineering for a pilot project. Administrators in the College of Engineering were exploring tools to evaluate researcher productivity and benchmark against peers and quickly saw ORCID as a useful addition. By the end of May, the project manager, in collaboration with CMU's Contracts Officer, had enrolled Carnegie Mellon as a Premium Member of ORCID and acquired a Creator Member License for the university.

In June 2014, the Library Policy and Planning Group (LPPG), led by the Dean of Libraries, approved a two-phased project to create ORCIDs for CMU researchers and to pre-populate the ORCID Registry records with their CMU affiliation if this information were publicly available in the university's online directory. Pre-populating the records with this information would raise the visibility of the university and the researcher's role. Researchers could opt out of the project by not claiming their ORCID record. The first phase would develop the ORCID @ CMU web application and conduct a pilot project with the College of Engineering to test the web app and gauge the need for customer support. The second phase would be a university-wide project proceeding college-by-college. LPPG approved the pilot project team[4] and assessment criteria. The Dean of Libraries, the ORCID project sponsor, assumed responsibility for ensuring the

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1   DMSG members at the time were the Assistant Vice President of Research, Assistant Director of Administrative Computing, and (from CMU Libraries) the Director of Scholarly Publishing, Archives and Data Services, the Data Services Librarian, and the Scholarly Communications Librarian.

2   Executive Committee members at the time were the Dean of Libraries, Associate Vice President of Sponsored Programs, and (from Computing Services) the Vice Provost and Chief Information Officer, Director of Administrative Computing, and Senior Director of Infrastructure Services.

3   See https://orcid.org/about/membership.

4   The team initially included the Scholarly Communications Librarian (project manager); Data Services Librarian; Director of Scholarly Publishing, Archives and Data Services; Communications Coordinator; a programmer, and a liaison librarian to the College of Engineering.

project was completed, negotiating the project definition with the project manager, and authorizing changes in the project plan.

The ORCID team met regularly to develop technical specifications and communication plans. Members of the group consulted with university administrators to clarify campus policy and to secure needed permissions. In August 2014, following consultation with university legal counsel, the Chief Human Resources Officer and the Registrar, the project manager and the Dean of Libraries agreed on revised plans:

- To mitigate concerns about creating duplicate ORCIDs for those who already had one, creating ORCIDs that might never be claimed,[5] and precipitating questions and negative responses from researchers when they unexpectedly received email instructing them to claim their ORCID, the project would take an opt-in rather than an opt-out approach. The ORCID @ CMU web application would create an ORCID or capture a pre-existing ORCID at the researcher's request.

- ORCID Registry records would not be prepopulated with any information because the Acceptable Use Policy of the public online directory prohibits harvesting information from the directory for such purposes.

- Graduate students would not be included in the pilot. The Registrar was concerned about graduate students who had chosen to restrict public access to their information in the online directory, a right they have under the Family Educational Rights and Privacy Act (FERPA). While nothing could prevent graduate students from registering for an ORCID at the ORCID website, he did not want students who protected their identity in the CMU directory to expose that information in the ORCID Registry without understanding what they were doing.

The Dean also agreed to the team's recommendations that the ORCID web app deposit the ORCIDs in CMU's identity management system and that the Assistant Director of Identity Services join the team to facilitate this work. The team chose the identity management system as the hub for storing ORCIDs because it is centrally maintained and other CMU units, with appropriate permissions, can harvest the ORCIDs from there for various purposes.

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5   Published in 2015, the *ORCID 2014 Annual Report* and the final *ORCID Adoption and Integration Program Report* mention an average claim rate of 39% and roughly 42% respectively for ORCIDs created in opt-out programs. The low claim rate led ORCID to shift to promoting an opt-in (create-on-demand) approach (ORCID 2015, 9; Brown, Oyler & Haak 2015, 5).

The ORCID @ CMU Web Page and Application

The project director developed the ORCID @ CMU web page as the primary resource for information about ORCID. It briefly describes the objectives and phases of the project, and includes a 25-question FAQ. See Figure 1.

Figure 1: The ORCID @ CMU Frequently Asked Questions (excerpt).
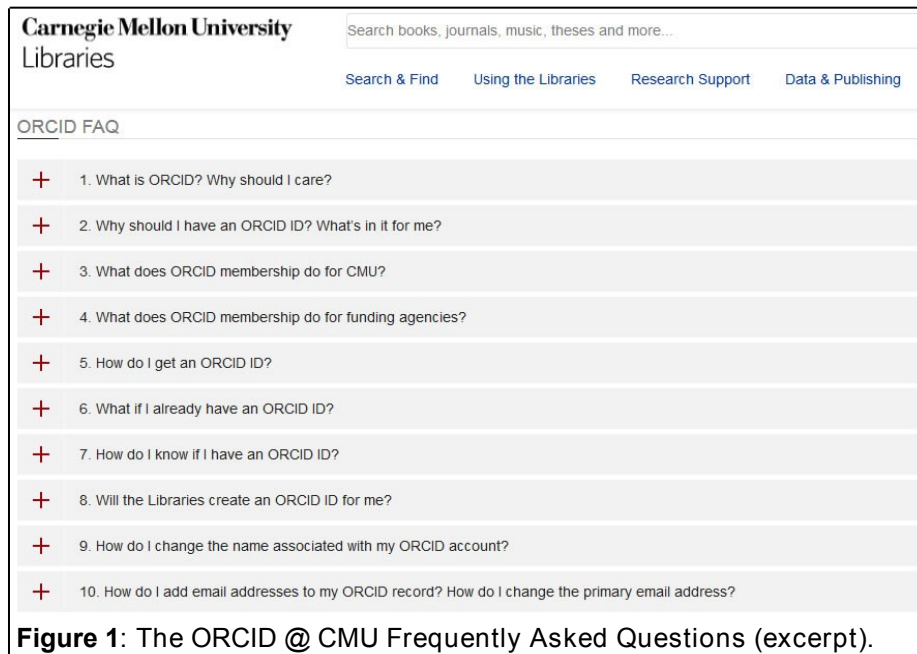
In consultation with the Assistant Director of Identity Services, the team programmer developed the web application. The app prompts users to indicate whether they already have an ORCID or want to create one. See Figure 2. The app then prompts users to authenticate

Figure 2: The ORCID @ CMU web application interface.
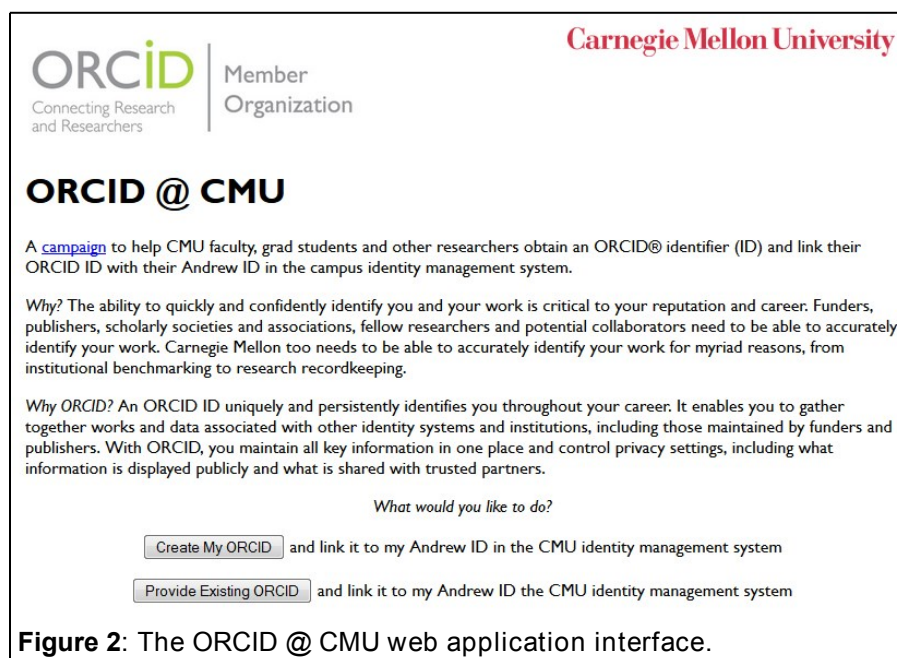
with their Carnegie Mellon ID. Thereafter, if they already have an ORCID, the app prompts them to login to their ORCID account, and retrieves and deposits their ORCID in CMU's identity management system. If they want to create an ORCID, the app queries the CMU directory to determine their status. For students who have protected their information in the directory, the app instructs them to contact the Scholarly Communications Librarian. Otherwise, the app sends the requester's name and email address to ORCID; ORCID creates an ORCID ID, and the app retrieves and deposits it in CMU's identity management system. The app also logs the creation and claiming of new ORCIDs and the capture of pre-existing ORCIDs.[6]

The web page and application were tested and released by the team in October 2014. Though they were publicly available thereafter, the plan for the pilot phase of the project was to provide links to the web page and application only in the email inviting researchers to participate. Following the pilot, they would be promoted on the library website home page and other marketing channels described later in this article. The project manager would update information on the ORCID @ CMU web page in response to questions or comments received from CMU researchers.

The Assessment Criteria

In November 2014, LPPG approved revised assessment criteria for the project precipitated by the change to an opt-in project. In the absence of any benchmarking data,[7] the project manager proposed the following criteria for assessing success:

- At least 40% of those invited to participate use the ORCID @ CMU web app.

- At least 40% of those who use the web app to create an ORCID promptly claim their ORCID record. Another 40% claim their record after receiving a reminder.

- Examination of a random sample of claimed ORCID records indicates the majority of researchers imported their citations.

Setting the bar for participation at 40% was ambitious, but was not perceived to be overly ambitious.

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6   Following the best practice established in the A&I Program, the ORCID @ CMU web app is freely available on github at https://github.com/CMU-Lib/orcid-webapp.

7   The A&I Program use case reports available when the team planned ORCID @ CMU were interim reports that provided no assessment criteria (see https://orcid.org/organizations/institutions/usecases). A 2011 slideshow by Lisa Schiff of the California Digital Library reported only "varying researcher participation rates" in their opt-in program (Schiff 2011).

The Pilot with the College of Engineering

Planning and Implementation

University legal counsel, the Chief Human Resources Officer, and the Dean of the College of Engineering (a.k.a., Carnegie Institute of Technology, CIT) gave the ORCID team permission to use CMU researcher email addresses to invite them to participate in the pilot project. The CIT Associate Dean agreed to provide the email addresses and demographic information of the researchers to be invited. Compiling the list took much longer than expected and the list provided was problematic, delaying the launch of the pilot from the team's target of mid-October until November 11, 2014. The Associate Dean sent the invitation message that launched the pilot.

The ORCID team did no marketing for the pilot beyond developing the ORCID @ CMU web page and preparing the invitation and two reminder messages because the Associate Dean told us he had done sufficient marketing. We were not to bother researchers with additional outreach prior to the launch.

Outcomes

The invitation was sent to 429 researchers. Most (95%) were CIT researchers; the others were CMU researchers in other colleges who collaborated with CIT. Considering the pilot to have run until the launch of the university-wide campaign in March, the pilot appears to have succeeded. Transaction logs indicate that 211 researchers used the web app: 133 new ORCIDs were created and 78 pre-existing ORCIDs were captured. The apparent participation rate of 49% exceeded our goal of 40%. The claim rate likewise exceeded our goal of 40%. Researchers immediately claimed 95% of the new ORCIDs.

However, many of the 211 researchers who used the web app were not invited to participate in the pilot. Roughly 20% of the participants were from the Mellon College of Science (MCS). Only two MCS researchers were invited to participate; 42 actually participated. The overall participation rate for CIT researchers was 36%; however, participation in several departments exceeded the project goal of 40%. Table 1 shows participation by CIT department and status, based on the number of researchers invited.

Transaction logs also reveal the effects of reminders and outreach efforts. Reminder messages were sent to those invited to participate who had not participated two and four weeks after the launch. The first reminder, sent by the CIT liaison librarian, had no apparent effect on participation. The second reminder, sent by the CIT Associate Dean, had a conspicuous effect. Ten weeks into the pilot, upon discovering that the MCS Associate Dean, a physics professor, was enthusiastically encouraging Physics Department faculty to get an ORCID, the project manager promptly urged him to have physics researchers use the ORCID @ CMU web app. They did. An invited presentation to the Software Engineering Institute Technical Council also appears to have boosted participation. See Figure 3.

Table 1: CIT pilot participation rates by CIT department and status. Shaded areas indicate no one was invited in this category.

	Department participation	Faculty	Postdocs	Staff
Biomedical Engineering	48%	69%	33%	0%
Bone Tissue Engineering Center	0%			0%
Chemical Engineering	34%	58%	0%	10%
Civil & Environmental Engineering	50%	52%	33%	100%
CyLab	11%	33%	0%	9%
Electrical & Computer Engineering	36%	42%	32%	25%
Engineering & Public Policy	25%	29%	33%	17%
Information & Communication Technology	0%	0%		
Information Networking Institute	50%	50%		
Institute for Complex Engineered Systems	33%	64%	0%	0%
Materials Science & Engineering	54%	65%	0%	41%
Mechanical Engineering	31%	38%	27%	13%
Silicon Valley campus	29%	17%	100%	44%
Dean's Office	100%	100%		
TOTAL	36%	45%	26%	21%

Figure 3: The effects of marketing the CIT pilot.
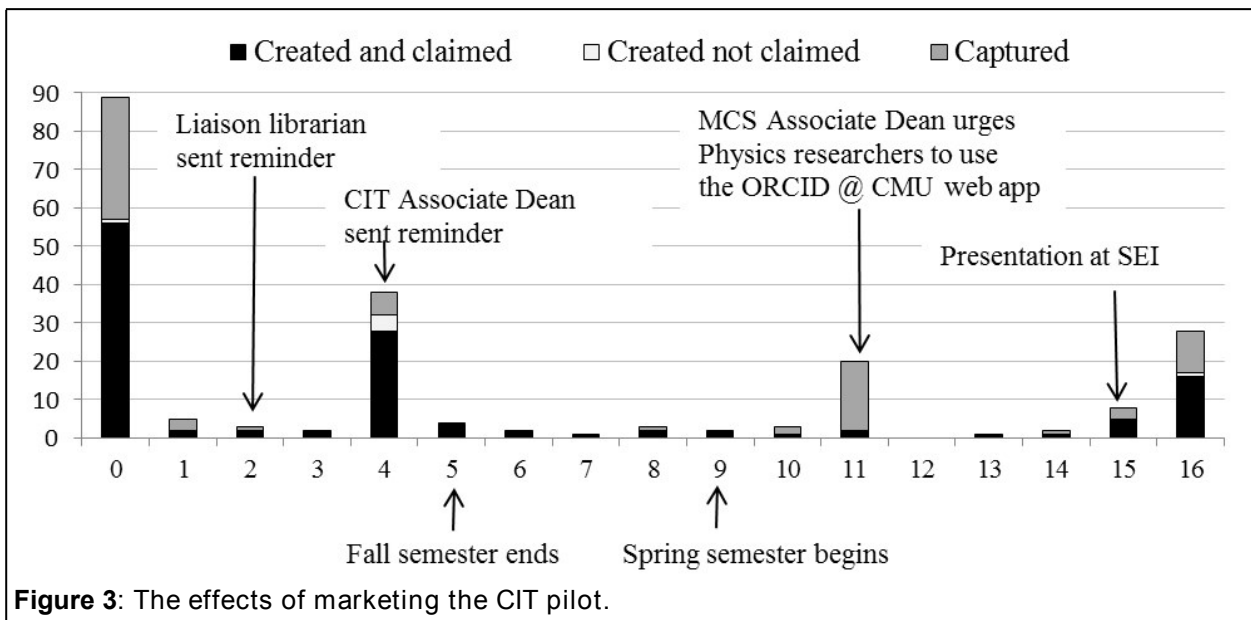
Lessons Learned

Researchers asked no questions about ORCID and reported no problems with the ORCID @ CMU web app during the pilot. However, based on the time it took to organize the pilot and the participation rate, the team agreed we needed a more efficient way to get CMU researcher email addresses and demographics, an aggressive marketing campaign, and a strategy to expedite the pace. Phase two of the project proceeding college-by-college would take years to implement. In January 2015, the project manager and Dean of Libraries agreed that the project should proceed as a university-wide campaign, with researchers in all colleges invited at once. The Dean secured support from the university President, enabling the team to brand the project as a university, rather than a library, initiative.

University-Wide ORCID @ CMU

Planning and Implementation

To expedite compiling researcher email addresses, in early February 2015 the ORCID team received permission from the Chief Human Resources Officer and the Registrar to use their faculty and graduate student email distribution lists. Given the President's support for the project, the Registrar would send the invitations as official university communications to all CMU faculty members who did not participate in the CIT pilot (1,564 faculty), and all CMU graduate students on the Pittsburgh and Silicon Valley campuses (5,256).[8]

Following instructions from the Registrar and Dean of Libraries, the project manager prepared the email invitations. The invitations to faculty instructed them to forward the message to research staff and to any undergraduate students working on significant projects in their departments. The invitations to graduate students instructed those who chose to protect their information in the online public directory to contact the Scholarly Communications Librarian. The project manager secured permission to have the invitations to faculty co-signed by the Vice President of Research and the Interim Provost, and the invitations to graduate students co-signed by the Dean of Student Affairs and Dean of Libraries.

Working through the rules and permissions required for official university communications delayed launch of the university-wide campaign until March 7, 2015, during mid-semester break. Meanwhile, the team developed what we thought was an aggressive marketing plan (described below).

Outcomes

Use of official email distribution lists expedited creating the invitation lists for the university-wide campaign, but complicated assessing the outcome of the campaign. An ORCID was not particularly relevant for many of those invited to participate, e.g., teaching-track faculty, performance artists, and students in professional master's degree programs. Furthermore, the number and demographics of the people ultimately invited to participate were unknown. The team had no direct access to the distribution lists and no

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8   Other CMU distance programs are either undergraduate programs or professional master's degree programs.

knowledge of whether faculty, as instructed, forwarded the invitation to research staff or undergraduate students.

The project manager mined the ORCID @ CMU transaction logs, queried the CMU directory, and coded the findings to determine the department affiliation and status of those who used the web app. As of May 31, 2015, 946 researchers had used the ORCID @ CMU web app. This includes the 211 who participated in the CIT pilot. In total, 732 ORCIDs were created, 205 pre-existing ORCIDs were captured, and nine attempts to create an ORCID were aborted. ORCIDs successfully created and captured were associated with the researcher's CMU ID in the identity management system. Roughly 93% of the created ORCIDs were promptly claimed. Table 2 shows the creation and claiming of ORCIDs by college.

Table 2: Use of the ORCID @ CMU web app.

ORCIDs	Created and claimed	Created not claimed	Attempt to create	Captured	Total
College of Fine Arts	21			4	25
College of Engineering	226	22	3	73	324
Dietrich College of HSS	44	6	2	14	66
Heinz College	56	4		2	62
Mellon College of Science	90	2	2	50	144
School of Computer Science	154	12	1	29	196
Tepper School of Business	46	2		6	54
Other	42	5	1	27	75
TOTAL	679	53	9	205	946

To estimate participation rates, the project manager used data from the CMU Factbook[9] on the number of faculty and graduate students in participating departments fall semester 2014. Based on the 7,139 researchers the team knew were invited to participate in ORCID @ CMU, only 13% participated. Table 3 shows the participants by college and status, and the relative size of the faculties and graduate student enrollments. The raw data are difficult to interpret because the colleges vary considerably in the size of their faculties, staffs, and enrollments, and the nature of their master's degree programs. The Factbook distinguishes faculty on various tracks, but it does not differentiate research-oriented master's degree students from professional master's degree students.

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9   See http://www.cmu.edu/ira/factbook/facts2015.html.

Table 3: Participation by college and status.

Total FT			Faculty	Staff	Postdoc	Doctoral	Masters	U-grad	Total
Faculty	Grads								
145	327	College of Fine Arts (CFA)	8		1	6	10		25
205	1,916	College of Engineering (CIT)	138	29	16	87	53	1	324
223	268	Dietrich College of HSS (DC)	31	2	1	24	5	3	66
65	1,088	Heinz College (HC)	13	2	1	15	31		62
212	319	Mellon College of Science (MCS)	68		11	60	4	1	144
265	1,147	School of Computer Science (SCS)	84	6	11	59	35	1	196
96	683	Tepper School of Business (TSB)	20		2	13	17	2	54
		Other	33	30	1		11		75
		TOTAL	395	69	44	264	166	8	946
		Participation by status	42%	7%	5%	28%	18%	1%	100%

Table 4 shows participation based on data in the CMU Factbook for participating departments. It provides an estimate of participation by the various groups and indicates pockets of success based on the project goal of 40% participation. Assuming that the faculty who participated were tenure- and research-track faculty, over 40% of the tenure- and research-track faculty in three of the seven colleges participated.

Table 4: Participation rates by college and status.

	CFA	CIT	DC	HC	MCS	SCS	TSB
% Total faculty	6%	63%	15%	19%	16%	33%	19%
% Total tenure- & research-track faculty	11%	**79%**	26%	**42%**	31%	**60%**	27%
% Total doctoral students	18%	11%	12%	27%	21%	13%	14%
% Total master's students	3%	4%	6%	2%	12%	5%	2%

Examining participation per departments reveals many pockets of success.[10] Table 5 shows the departments where the participation rate for tenure- and research-track faculty exceeded 40%. In no department did participation by doctoral or master's degree students exceed 40%. Low participation by doctoral students is reason for concern. Low participation by master's degree students is difficult to interpret, given that all master's degree students were invited to participate, but many of them are not enrolled in a research-oriented program that would render an ORCID relevant.

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10   Heinz College and Tepper School of Business have no departments, so the participation rate for the college shown in Table 4 tells the story.

Table 5: Departments with faculty participation rates exceeding 40%. Instances where faculty participation exceeded 100% indicate errors in the Factbook data, participation by teaching-track faculty, or departments that hired more tenure- and research-track faculty after the 2014 Factbook data were compiled.

	Total participants	Tenure- & research-track faculty	Doctoral students	Masters students
College of Engineering				
Biomedical Engineering	22	110%	13%	4%
Civil & Environmental Engr	33	70%	16%	1%
Chemical Engineering	33	89%	14%	3%
CyLab	4	300%		
Electrical & Computer Engr	92	58%	8%	6%
Engineering & Public Policy	25	92%	10%	
Inst for Complex Engr Sys	9	267%		
Mechanical Engineering	44	72%	10%	5%
Materials Science & Engr	36	80%	12%	7%
Dietrich College of HSS				
Ctr Neural Basis of Cognition	4	50%	18%	
Psychology	13	45%	9%	
Mellon College of Science				
Biological Sciences	34	65%	22%	12%
Physics	59	100%	22%	
School of Computer Science				
Computer Science	56	67%	13%	4%
Human Computer Interaction	22	41%	18%	4%
Inst for Software Research	25	52%	16%	2%
Language Technologies Inst	29	50%	9%	6%
Robotics	44	68%	10%	4%

The ORCID team felt it aggressively marketed the university-wide ORCID @ CMU campaign. A week after launch, the project manager published an article on ORCID @ CMU in the monthly newspaper, *The Piper*. The Assistant Dean of Computer Science (CS) sent reminders to CS faculty and graduate students shortly after the launch. A large banner promoting ORCID @ CMU was displayed in the University Center for two weeks (maximum time allowed) beginning the second week after launch. During the fourth week, the Deans sent a reminder message to their constituents and printed flyers were mailed to faculty and graduate students. Throughout the campaign, printed ORCID flyers and bookmarks were distributed in the libraries, and progress reports were published in the university's online newsletter and the *Scholarly Communications Digest*. Several liaison librarians promoted ORCID @ CMU on their LibGuides. The team overlooked using social media. The effects of the marketing efforts are shown in Figure 4. The data suggest that reminders from administrators and perhaps the newspaper article and the direct mailing of printed flyers were most effective.
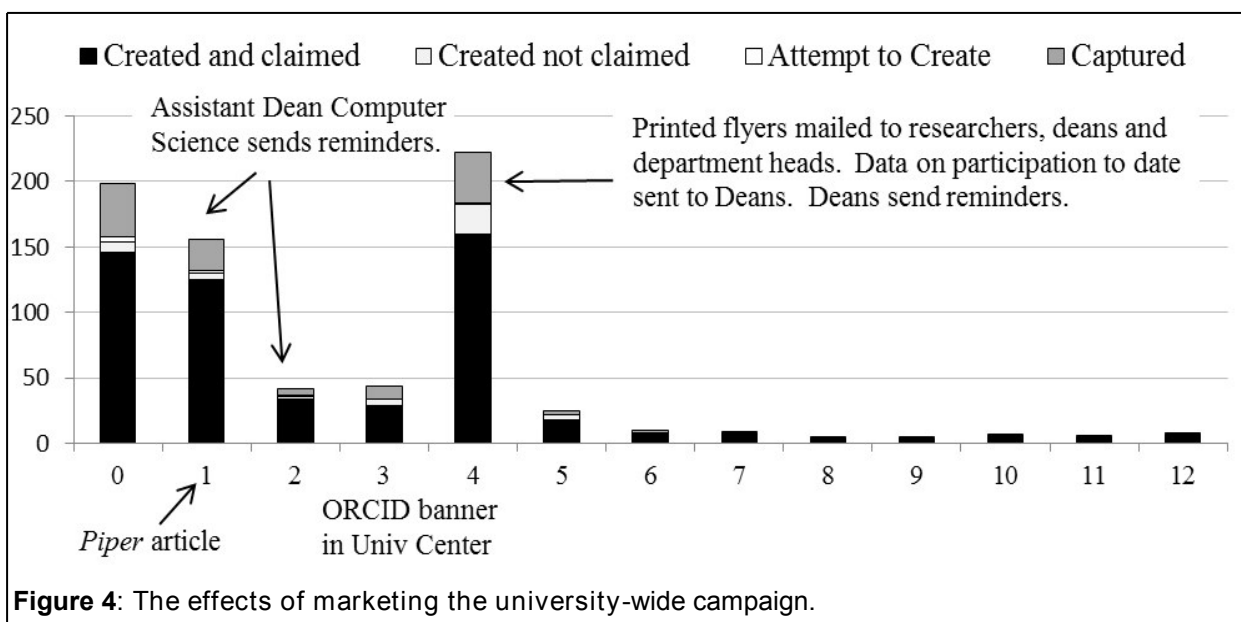

Figure 4: The effects of marketing the university-wide campaign.

Engagement with ORCID

Full realization of the benefits of ORCID is contingent on researchers providing information about their employment, funding, and works in their ORCID Registry record. Hence, the final criteria for assessing the success of ORCID @ CMU: examination of a random sample of claimed ORCID records indicates the majority of participants imported citations to their work.

Based on statistically valid random samples per college,[11] as of June 2015 almost half (46%) of those who participated in ORCID @ CMU had entered no information into their claimed ORCID record. See Table 6. Those who did enter information in many cases entered only their education. Overall, in the sample of 334 records, only 28% of the researchers entered any of their citations.

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11 Sample sizes were determined using the Sample Size Calculator at http://www.surveysystem.com/sscalc.htm with a confidence level of 95% and confidence interval of 10. Participants per college were sequentially numbered and selected for inclusion in the sample using the Random Integer Generator at http://random.org.

Table 6: Information in CMU researcher ORCID records.

	No info	Education	Employment	Funding	Works
College of Fine Arts	36%	60%	28%	8%	20%
College of Engineering	43%	49%	35%	4%	38%
Dietrich College of HSS	36%	51%	21%	5%	31%
Heinz College	66%	32%	18%	3%	5%
Mellon College of Science	48%	45%	26%	9%	29%
School of Computer Science	42%	42%	29%	5%	31%
Tepper School of Business	49%	37%	23%	0%	29%
Total sample	46%	45%	27%	5%	28%

According to the final *ORCID Adoption and Integration Program Report* published in January 2015, across the entire ORCID Registry, 18.74% of the records have at least one work attached. Had this information been available at the time the project manager proposed assessment criteria for ORCID @ CMU, she would have recommended a lower success rate, perhaps 25% (Brown, Oyler & Haak 2015, 5).

What We Could Have Done Better

In May 2015, the Jisc-ARMA ORCID Project issued a report on eight ORCID integration pilot projects in the UK (Henderson, Johnson & Woodward 2015). Reviewing the performance of the ORCID team in light of the recommendations articulated in this report, the team appears to have done what it was supposed to do. The team:

- Secured institutional support prior to launch.

- Implemented appropriate project management and governance.

- Confirmed the scope and objectives of the project.

- Identified resources for project delivery.

- Delivered the technical solution.

- Launched communications.

However, the team's performance in many of these areas was mediocre. Institutional support was verbal, with little commitment to act. For example, the Deans agreed to send one and only one reminder message encouraging participation in ORCID @ CMU. In the university-wide campaign, the project manager failed to actively engage the liaison librarians. Believing they knew how to reach their constituents and having no authority over them, she provided no explicit instructions; set no expectations. With the exception of mentioning ORCID on a few LibGuides, the level of liaison librarian engagement with the project is unknown. In hindsight, the ORCID @ CMU communications were improvised based on the benefits of ORCID touted in outreach materials available on the orcid.org website at the time.[12] The message was simple: get recognized and get credit for your work. It was not informed by CMU researcher perspective and, assuming it reached CMU researchers, failed to persuade the vast majority of them to participate in ORCID @ CMU.

The Jisc report recommends including an academic researcher on the team and developing a message that resonates with researchers (Henderson, Johnson & Woodward 2015). The University of Kent, a participant in the Jisc pilot projects, recommends using a team of advocates from across the institution to enhance access to target audiences and provide peer validation of official communications (University of Kent 2015). Including an academic researcher on the ORCID team would likely have increased participation. Recruiting advocates (like the Associate Dean of the Mellon College of Science) from across the institution would certainly have increased participation.

The ORCID team's greatest success was the implementation of the ORCID @ CMU web application. Even before the web app was released open source, we received requests for our code from Pennsylvania State University, the University of Pittsburgh, and the University of Wisconsin.

Takeaways from ORCID @ CMU

CMU moved very quickly from discussing an ORCID integration to launching the project. The Dean of Libraries, the project sponsor, expected this pace. The overall participation rate in ORCID @ CMU suggests the ORCID team failed, but we succeeded in many demographics. ORCID @ CMU is an ongoing, preparatory initiative, helping researchers and administrators prepare for the day when publishers and funders require ORCIDs because system integrations create efficiencies and add value. The key takeaways from ORCID @ CMU are:

- Secure a genuine commitment from senior administrators — Their active engagement is conspicuously effective.

- Recruit champions from across the institution — Researchers listen to their department heads and peers.

- Develop a message that resonates — Include researchers on the team or interview them prior to developing marketing materials.

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12 See, for example, http://orcid.org/sites/default/files/ENG_Researchers.pdf and http://orcid.org/sites/default/files/ENG_ResearchOrganizations.pdf.

- Allow sufficient time to prepare — Working through bureaucracy, recruiting champions, and developing effective marketing strategies and materials take time.

- Empower the project manager – Give the project manager the authority to assign work and hold team members accountable.

- Start with the low hanging fruit — Researchers in data-intensive disciplines interested in analytics and benchmarking appear to be receptive to ORCID. Success could motivate and build momentum.

- Develop special outreach to doctoral students and postdocs – An ORCID and comprehensive ORCID Registry record will enhance early career researchers' online presence.

Disclosure

The author reports no conflict of interest.

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