

Effect of learning resources on Mendeley user adoption and productivity

For more information:

Matthew Green (Matthew.green@mendeley.com)

Jennifer Chang (j.chang@elsevier.com)

Research Authors and Partners

Matthew Green
Mendeley



Jennifer Chang
Elsevier



Yahia Abaza
Mendeley



Tina Qin
Michigan State University



Helen Josephine
Stanford University



Rajiv Nariani
York University



Carrie Levinson
Touro College



Hannah McKelvey
Montana State University

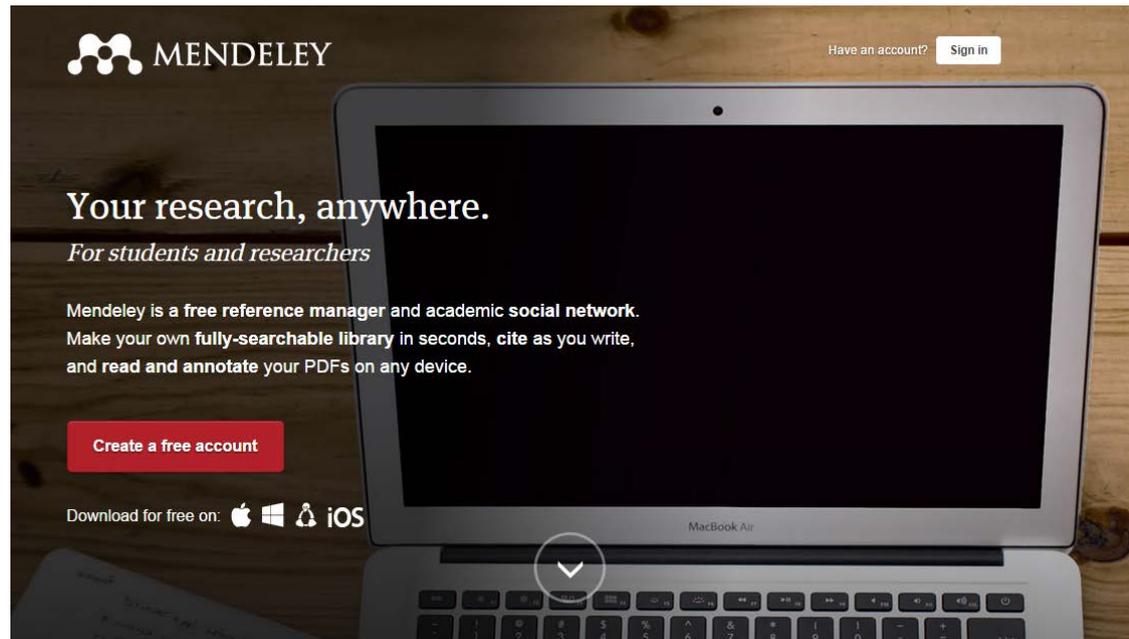


Lynn Berard
Carnegie Mellon University



What is Mendeley

- Mendeley is an easy-to-use reference management tool on top of a social collaboration network
- 4+ million researchers and students currently use Mendeley. Hundreds of academic institutions also claim it as their preferred researcher tool!



Objectives & Hypotheses

Our objectives

- To understand the user adoption pattern of a reference management tool such as Mendeley
- To understand differences between discipline and academic statuses and how they are affected by different structured and just-in-time learning and support resources.

Our hypotheses

- Libraries can improve usage of reference management tools if they adopt a mix of learning support services
- Structured support is more effective than 'just-in-time' support
- Support for early career researchers is more effective than for seasoned researchers
- Support for different disciplines should be adapted

Analysis Method & Definitions

1. Usage analysis (“All” = all US and Canadian academic institutions)

- Baseline: “All” compare to the 6 partners (February 2014 – February 2015, 12 months)
- Control: “All” compare to the 6 partners (March – May 2015, 3 months)
- Test: “All” compare to the 6 partners (March – May 2015, specific review based on activity diaries)

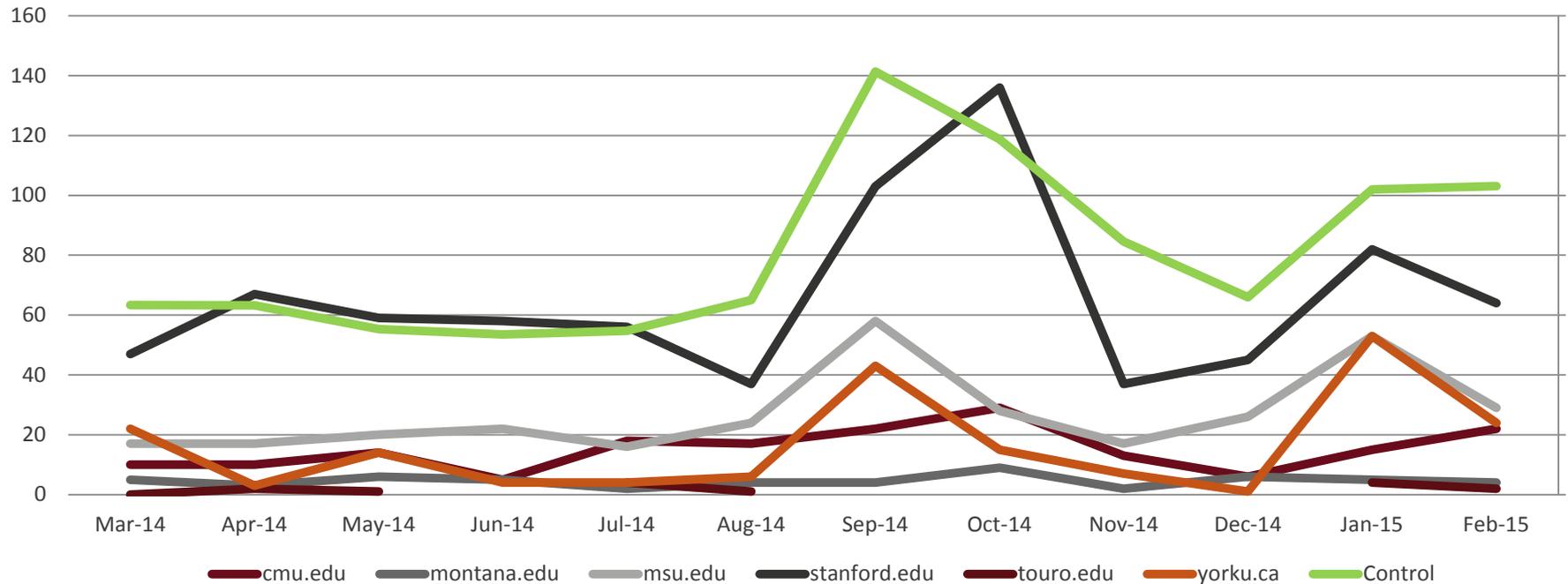
2. User feedback survey

- 162 users provided feedback on how and what resources they used to learn Mendeley

Parameter	Definition
Total user (#)	Total # of Mendeley users registered with an institutional email
New users (#)	# of new signed-up Mendeley users within a time period
Active user (#)	# of users with >1 activity in the past 6 months

Analysis: User Adoption Metrics – Baseline (New Users)

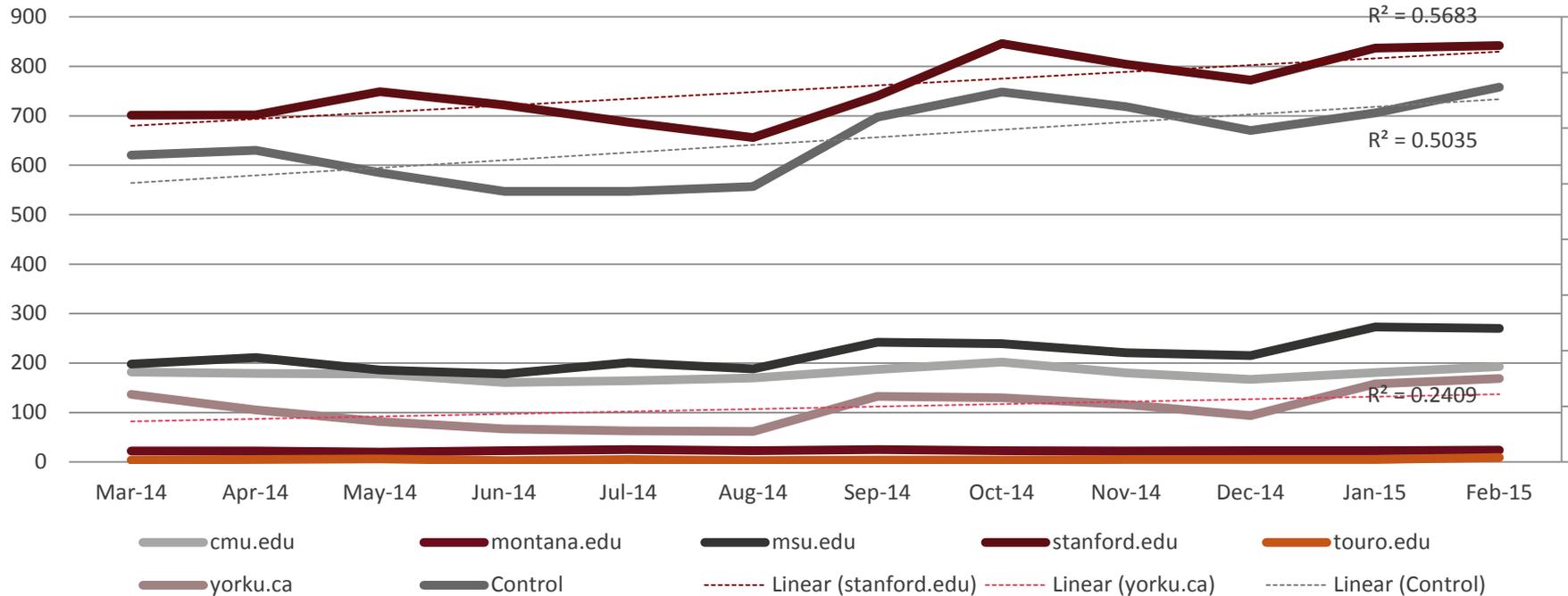
New Users: Mar-14 - Feb-15



- Mendeley user adoption is highly seasonal because of the influences of academic institutional terms
- Highest new user adoption months are September and January matching to the start of new school terms

Analysis: User Adoption Metrics – Baseline (Active Users)

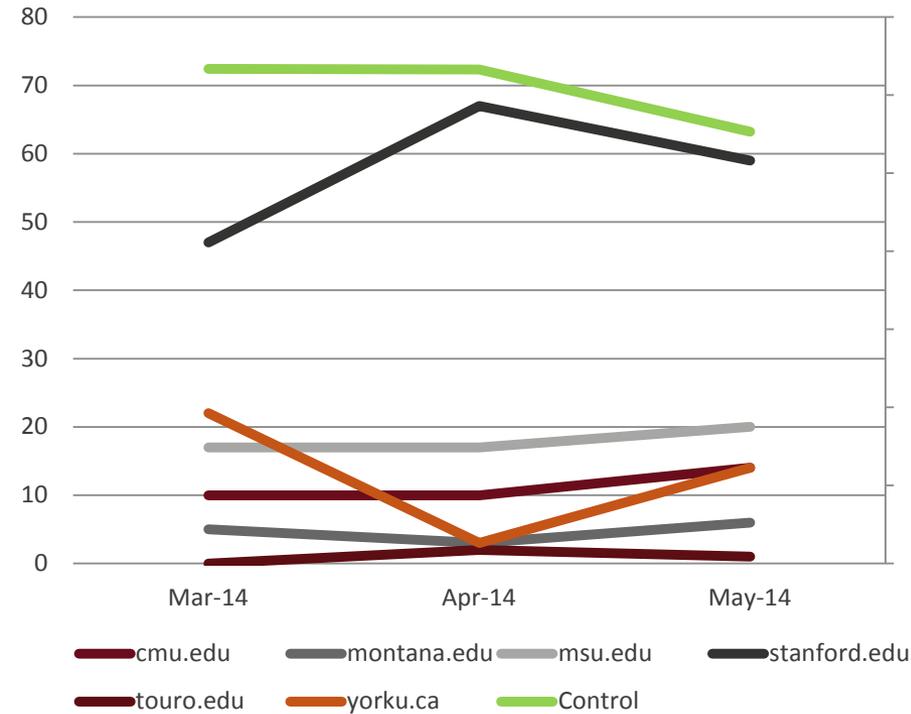
Active Users: Mar-14 - Feb-15



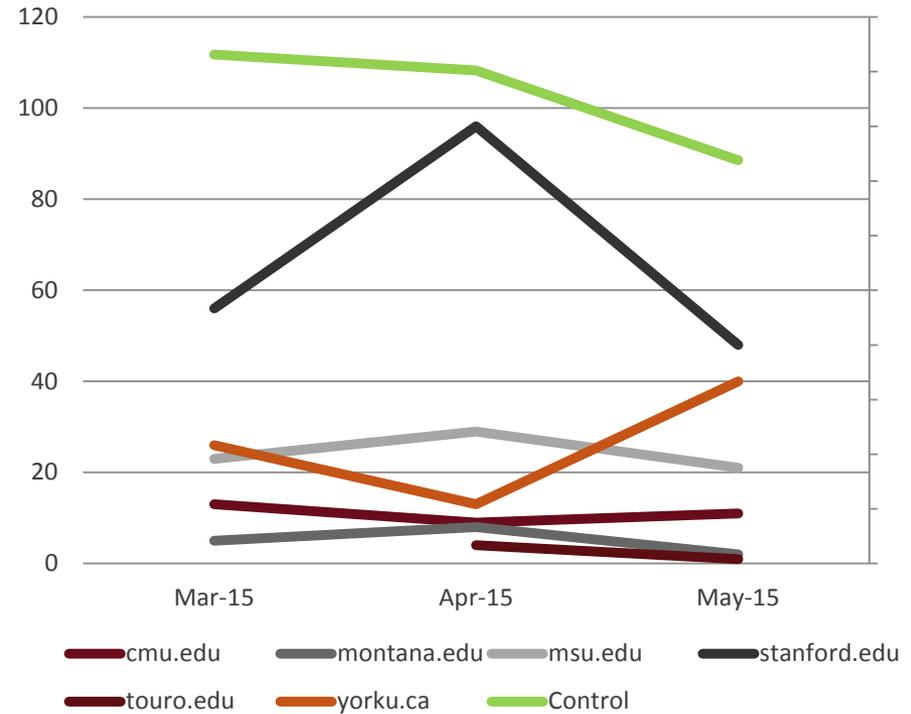
- Mendeley active user numbers are also seasonal because of the influences of academic institutional terms
- A positive correlation ($R^2 > 0.5$) can be noticed in the active user numbers as new users continue to join Mendeley

Analysis: User Adoption Metrics – Control (New Users)

New Users: Mar-14 - May-14



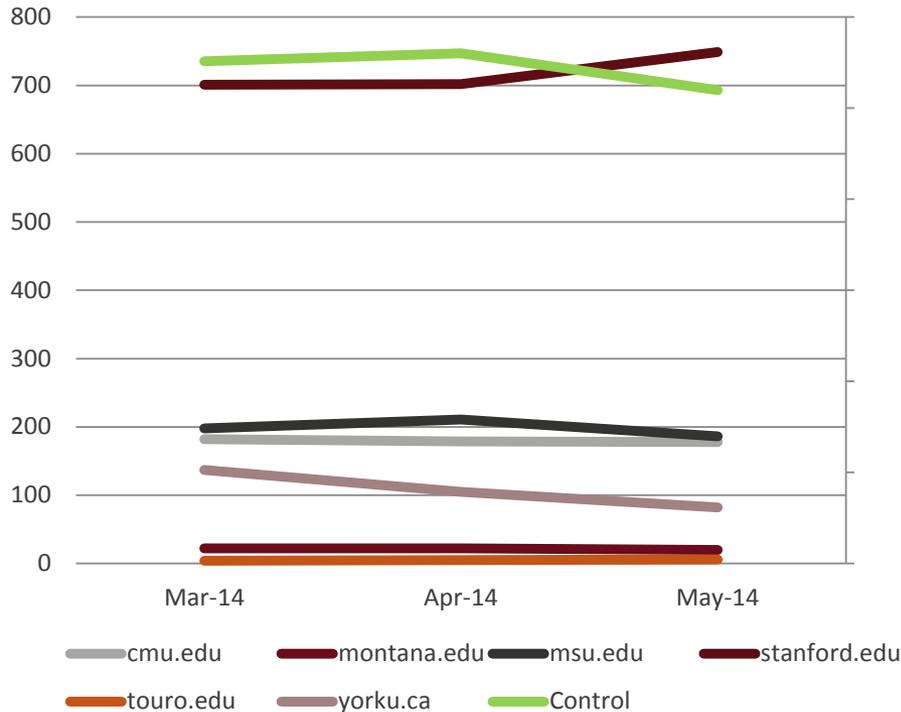
New Users: Mar-15 - May-15



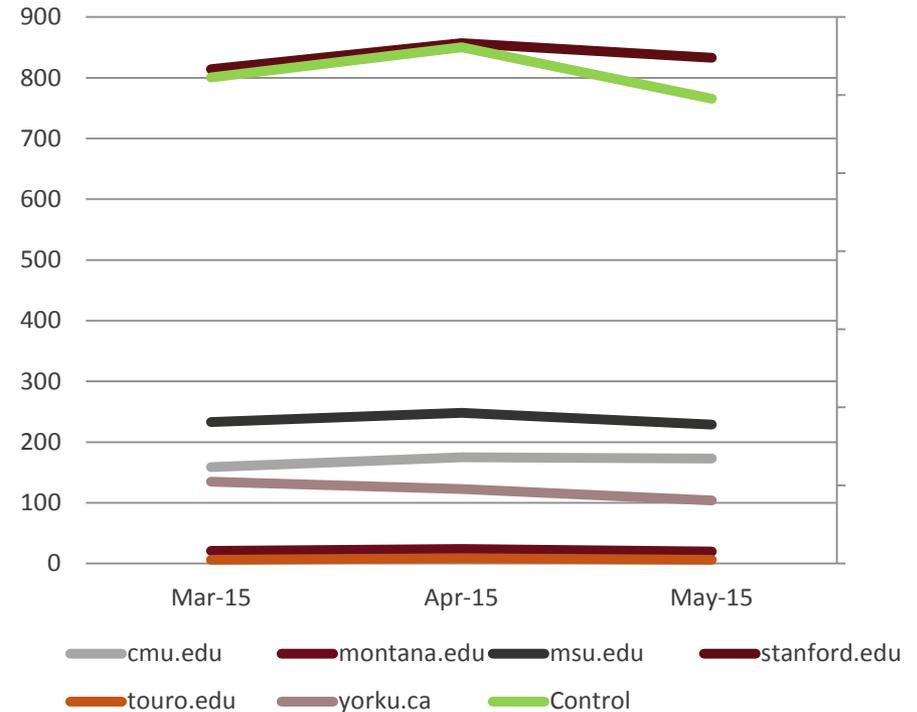
- “New user” adoption of the 6 partner university seem to remain relatively consistent to the CONTROL line.
- However, activities specifically at Stanford.edu, Yorku.ca, and MSU.edu have resulted in different patterns

Analysis: User Adoption Metrics – Control (Active Users)

Active Users: Mar-14 - May-14



Active Users: Mar-15 - May-15



- “Active users” from the 6 partner university seem to remain stable across all groups.
- They appear relatively consistent from 2014 to 2015



Analysis: Library Activity Analysis

Definition

- **Structured on-line** (librarian initiated): Library websites, LibGuide, Tutorial videos
- **Structured in-person** (librarian initiated): Classroom training, department updates, research group meetings, Research day events, Graduate services/ undergraduate services
- **Ad hoc on-line** (user initiated): online library chat, email, phone call
- **Ad hoc in-person** (user initiated): In library inquiry
- **Social, promotions**: Blog, Twitter, Facebook, Posters, eNewsletter



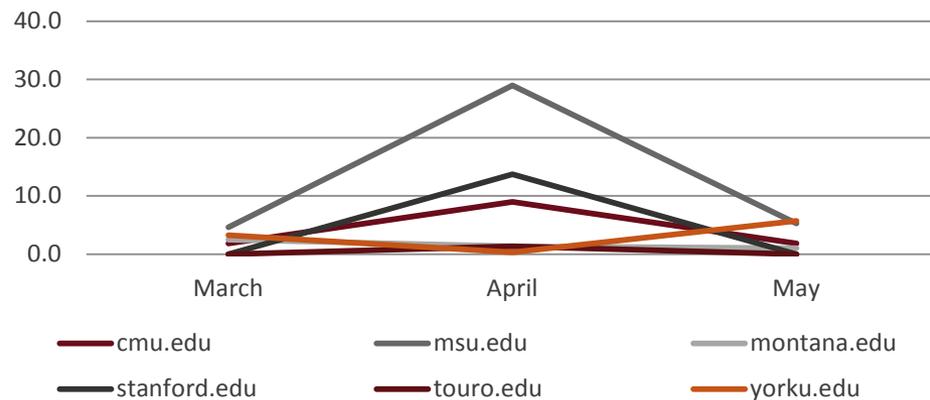
Analysis: Library Activity Analysis

Total amount of 'Mendeley' learning resources applied by each university through March – May 2015

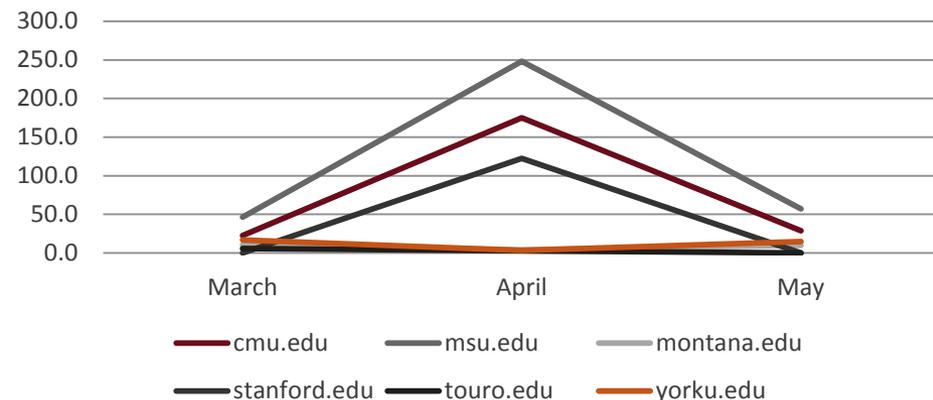
	Carnegie Mellon University	Michigan State University	Montana State University	Stanford University	Touro College	York University
Structured on-line	64%	0%	20%	7%	25%	58%
Structured in-person	21%	80%	70%	21%	63%	12%
Ad-hoc on-line	0%	20%	5%	0%	0%	11%
Ad-hoc in-person	14%	0%	5%	71%	0%	10%
Social, promotion	0%	0%	0%	0%	13%	10%
TOTAL HOURS	14	10	10	7	4	54

Analysis: Library Activity Analysis

Avg # of new users per each hour of library service



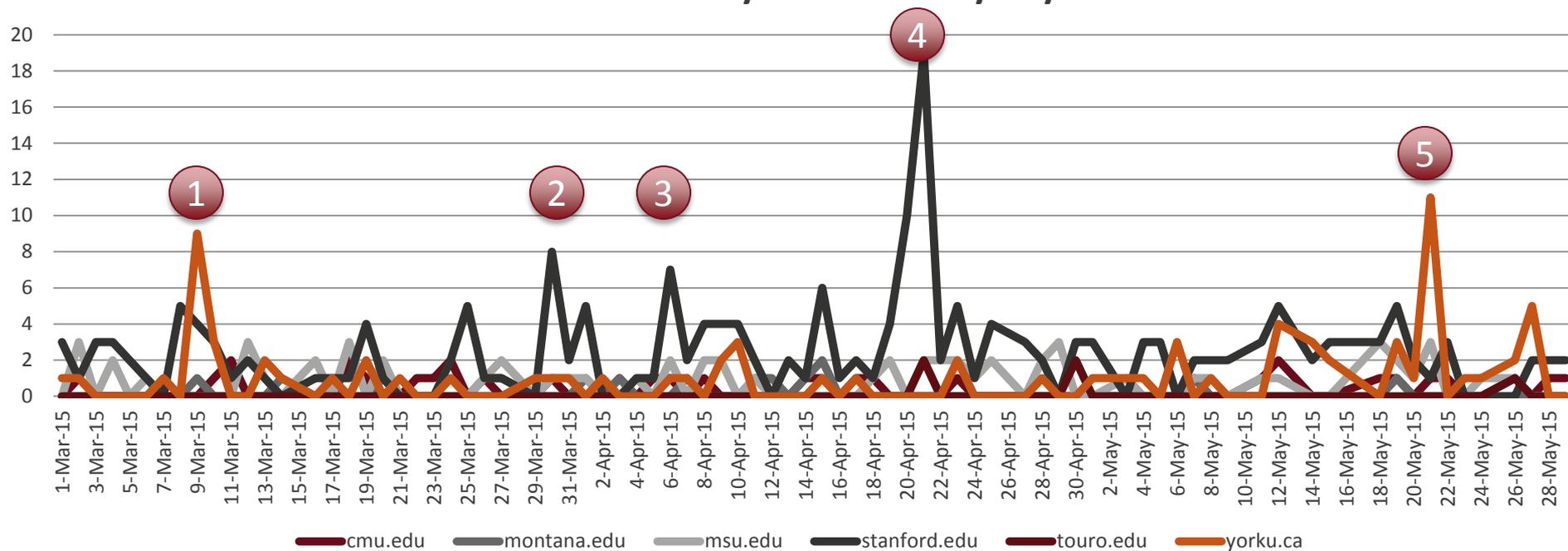
Avg # of active users per each hour of library service



- The 6 partner universities documented a total of 99 hours of libraries supporting Mendeley users during March – May 2015.
- It is difficult to draw correlations based on limited data as well as not optimal user activity period.
- But it is interesting to see, again, the positive ‘new user’ and ‘active user’ activities during April in almost all the institutions.

Analysis: User Adoption Metrics - Test

New users by Institution by day



1. March 9: 9 new users from York → Structured in-person demo of Scopus & Mendeley
2. March 30: 15 new users from Stanford in 3 days → Possible normal fluctuation
3. April 6: 12 new users from Stanford → Gear Up Day for Research
4. April 21: 19 new users from Stanford → Structured in-person demo for Freshman
5. May 21: 11 new users from York → Structured in-person demo

Structured in-person demo's appear to have the biggest immediate adoption impact. However, other promotional activities (such as Research Day) seem to have a multi-day effect.

Analysis: User Feedback Survey



Mendeley Usage Survey

MENDELEY

* 1. Which university are you affiliated with?

- York University
- Touro College and University System
- Stanford University
- Michigan State University
- Montana State University
- Carnegie Mellon University
- Other (please specify)

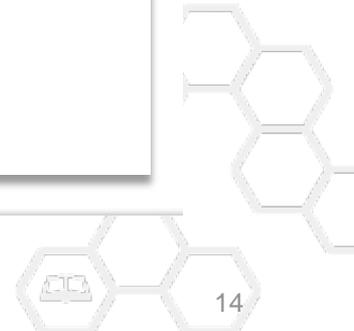
* 2. What is your main discipline of study?

* 3. What is your academic status?

* 4. How long have you been using Mendeley?

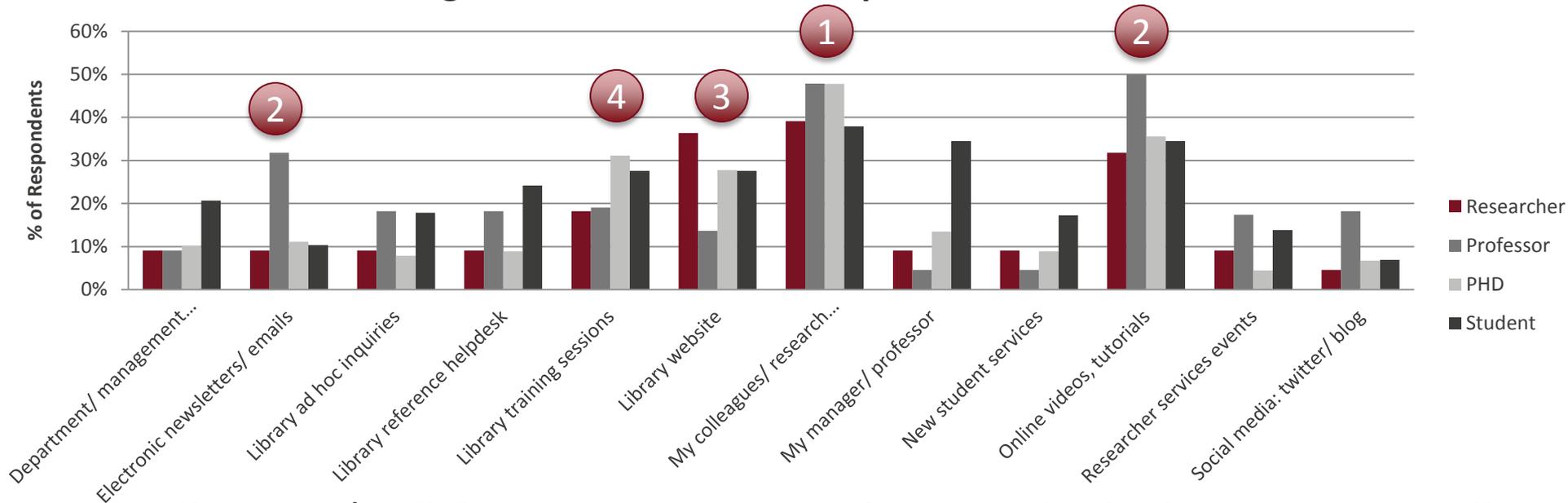
- < 6 months
- 6 - 12 months
- 1 - 3 years
- > 3 years

- User feedback survey was deployed to all current Mendeley users within the 6 partner institutions.
- Survey ran from May 18 – 29, 2015 for 12 days
- 181 total respondents. 19 excluded from analysis for various errors
- 162 responses used for rest of the study



Analysis: User Feedback

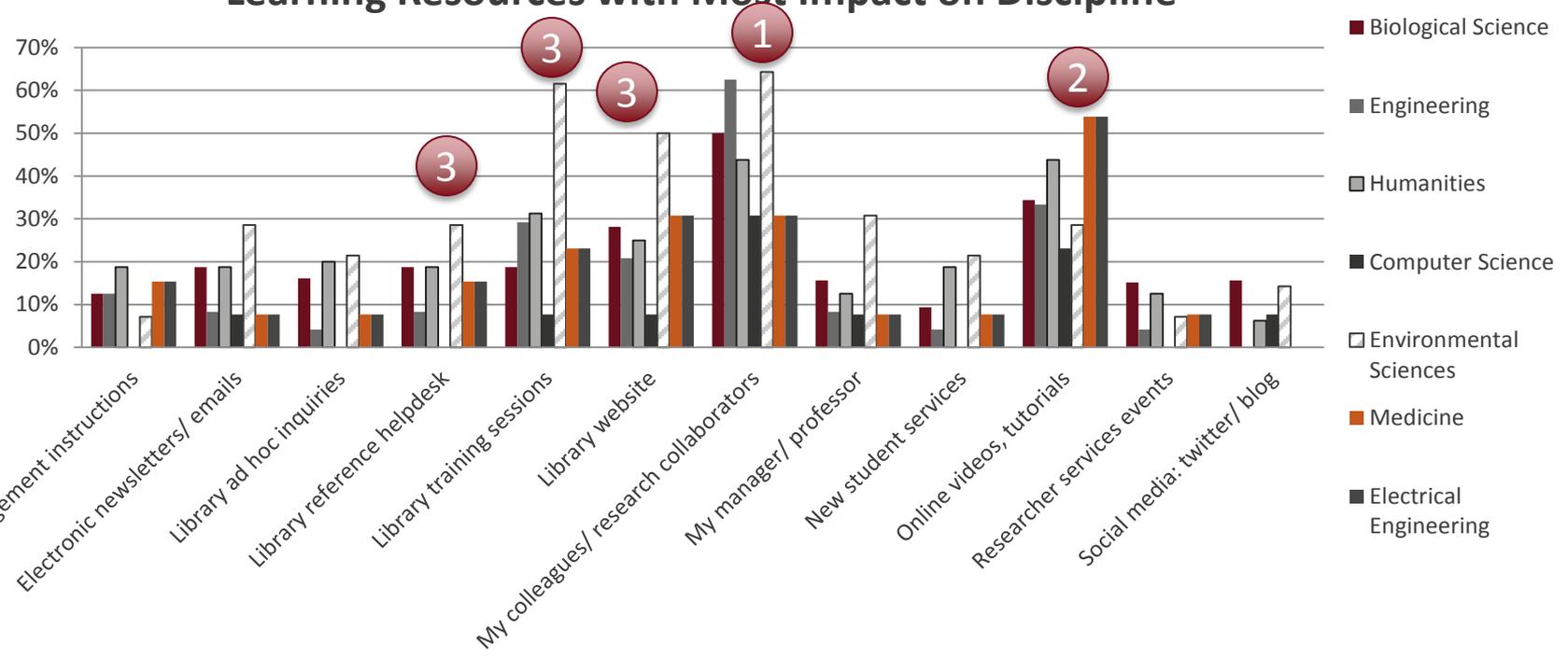
Learning Resources with Most Impact on Academic Status



1. “Colleagues/ collaborator” recommendation is the highest impact in all academic statuses
2. Professors are then most affected by “Online video & tutorial” as well “newsletters and direct emails”
3. “Library website” has high impact on researchers
4. “Library training sessions” has high impact on Ph.D.s

Analysis: User Feedback

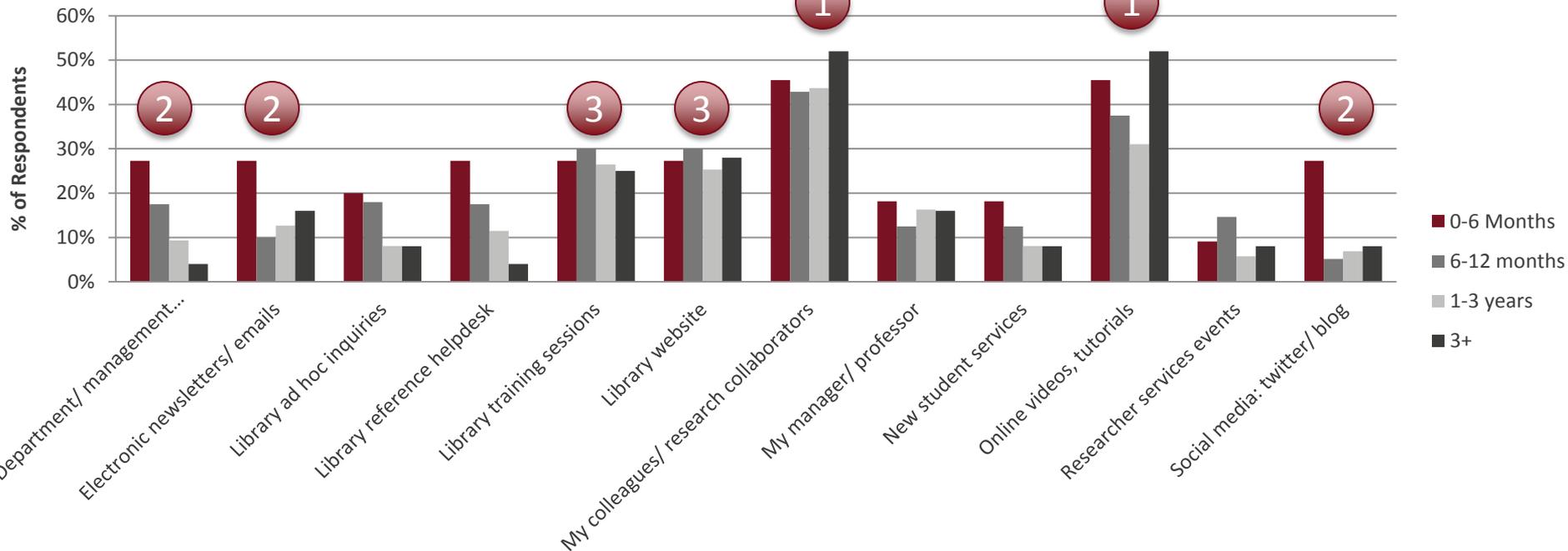
Learning Resources with Most Impact on Discipline



1. “Colleagues/ collaborator” recommendation is the highest impact in all disciplines
2. “Online video & tutorial” has high impact especially for medicine and electrical engineering
3. Non-STEM disciplines (i.e. Environmental sciences and humanities) are more favorable towards various library website and support services

Analysis: User Feedback

Learning Resources with Most Impact on Lengths of Usage



1. “Colleagues/ collaborator” recommendation and “online video & tutorial” are almost equal in impact for all users
2. New users are most affected by various social media and direct communications (i.e. newsletter, department announcement) “
3. “Library website” and “Library training sessions” are then secondarily effective for all users

Conclusion

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Objective #1: To understand the user adoption pattern of a reference management tool such as Mendeley

- User adoption and user 'activeness' is heavily influenced by seasonality
- Structured in-person training appear to have the most immediate impact on adoption numbers.
- Other promotional activities (such as Research Day) seem to have a multi-day effect.

Objective #2: To understand differences between discipline and academic statuses and how they are affected by different learning and support resources.

- "Colleagues/ collaborator" recommendation is the highest influencer in all academic statuses as well as disciplines
- Professors are the most affected by "Online video & tutorial" as well "newsletters and direct emails"
- Non-STEM disciplines (i.e. Environmental sciences and humanities) are more favorable towards various library website and support services
- New users are most affected by various social media and direct communications (i.e. newsletter, department announcement)