

## **Using ARIES for the MCB Faculty Search**

(Department of Molecular & Cellular Biology)

### **Introduction**

The new ARIES online recruitment system for academic positions facilitates the hiring process by allowing:

- 1 - Candidates to enter information and upload position specific documents;
- 2 - Recommenders to submit letters of support; and
- 3 - Administrators and faculty search committee members to view applications and rank candidates.

This document is concerned with the 3<sup>rd</sup> function of the hiring process, specifically the workflow to view candidate applications.

The following pages detail issues that MCB administrators identified while using the new system. In addition, this document includes suggestions on how to improve the ARIES software.

### **Outline**

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## **A. Downloading Candidate PDF files (not including recommendations)**

The MCB search required each candidate to upload between 5 and 7 core documents, including a CV, cover letter, publications, and others. Approximately 230 people applied for the position, resulting in a minimum of 1,150 and a maximum of 1,610 core documents for reviewers to examine.

(\* For this document, 230 is used as the number of applicants. The actual number was 234.)

The ARIES website made these core documents available in PDF format via two types of mechanisms:

1. One link per PDF Document, with links organized by candidate.
2. A “Bulk Action” to “Download Applications as PDF”

### **1. One link per PDF Document**

Given the sheer number of document links (1,150 to 1,610) this method of accessing documents proved unwieldy for initial viewing. If a user rapidly clicked every link, the files could be downloaded in less than 90 minutes—assuming 3 seconds to click and download each file.

However, given that the files are named by number, and would need to be renamed or put into a candidate-specific folder for organization, a more realistic time would be 15 seconds per document. This results in nearly 5 to 7 hours of clicking and downloading, but not reading, the documents.

This time estimate is from the calculations below.

<b># Applicants</b>	<b>Min core PDFs</b>	<b>Max core PDFs</b>
230	1,150	1,610
Total minutes @ 3 sec /download	58	81
Total minutes @ 15 sec/download	288	403
Total hours @15 sec/download	4 hrs, 48 min	6 hrs, 43 min

### **2. A “Bulk Action” to “Download Applications as PDF”**

The ARIES interface also offers the option of consolidating the core documents of 1 or more candidates into a single PDF file.

In the experience of department administrators, this functionality would work once for either 1 or 2 candidates. Subsequent attempts at downloading a consolidated PDF for a single applicant would fail unless the page was refreshed.

Attempts to consolidate the documents of more than 2 candidates at a time consistently failed after several minutes.

When the “bulk action” was tested for single candidates, refreshing the page between actions, the minimum download time was 1 minute per candidate (including refresh). For 230 candidates, this translates to 230 minutes, or approximately 3 hours, 50 minutes. See chart below for calculations:

Total minutes via PDF consolidation @ 1 min/applicant	230
Total hours via PDF consolidation @ 1 min/applicant	3 hr, 50 min

In addition, the bulk action per candidate still resulted in 1,150 clicks, as follows.

	1 click to select candidate
	1 click to select bulk action
	1 click to approve bulk action
	1 click to close dialog box
	1 click to refresh screen for another download
<b>Total</b>	5 clicks per candidate
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	230 candidates x 5 clicks =
	1,150 clicks + clicks to applicant listing pages

Compared to downloading files by “One click per PDF”, this number of clicks is still onerous and time consuming. Also, the estimate of 1 minute per candidate assumes no browser problems.

### 3. Conclusion

Expecting search committee members to click hundreds of links and spend hours downloading core documents is not realistic. In addition, none of this effort includes actually reading applicant materials.

The bulk action feature did not work properly for us.

#### 4. Possible Fix

Fix the bulk action features to allow all applicant materials to be consolidated at the same time.

Note, given the number of documents, it may not be realistic to expect “instant” ligation of hundreds of PDF files. Another option may be to:

- (1) Give the administrator in charge of a particular search the power to initiate a PDF consolidation process for all applicants.
- (2) Design this process to result in 1 consolidated PDF file\* per applicant that will be made available with several hours—or the next day. (e.g. The result would be 230 consolidated PDF files, 1 per applicant.)
- (3) Notify the head administrator via email that these files are available for download. Make the files available to administrators and search committee members for at least 24 hours.

\*Note: Currently, it appears that 1 consolidated PDF file per applicant is the best option. A single PDF for the current MCB search, including recommendations, would be over 1.5 GB. This file size would tend to slow down or crash a PDF viewer.

#### B. Timely Access to Candidate Recommendation Materials

##### 1. Downloading/Viewing Files

The ARIES system allows administrators and search committee members to view candidate-listing pages, with each page displaying up to 50 applicants in a tabular format.

Each row of a candidate-listing page contains information for a single applicant and includes direct links to that candidate’s core documents including CV, Cover Letter, Statement of Research, Publications, etc.

However, the candidate listing pages *do not give direct access to an applicant’s recommendations*. In order for a reviewer to download the minimum 3 recommendations for a single applicant, the reviewer must click 13 times across 5 web pages.

In the case of the posting for the “Assistant Professor of Molecular and Cellular Biology”, this became an issue for the faculty search committee.

**Given that there are 230 applicants, it would require 2,990 clicks to download 690 recommendation documents, and could take over 4 hours. This is to simply download the recommendations--not to read them.**

In addition, the number of documents and length of time increases if an applicant receives more than 3 recommendations. For this search, each person is allowed to request up to 5 recommendations.

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As noted above, in the case of the Molecular and Cellular Biology (MCB) faculty search, the lead faculty member fastidiously reads through every document in a candidate's application.

*The figures below were used to arrive at the statistics in the boldfaced paragraph above.*

# Candidates	230	
Total clicks	2,990	13 clicks / applicant
Total recommendations	690	3 recommendations / applicant

Time estimates	Seconds	Minutes	Approximate hours	Based on
Low - automated	5,980	99.7	1 hr, 40 min	26 seconds/applicant
Med - fast user	9,200	153.3	2 hrs, 33 min	40 seconds/applicant
Average - regular user	16,100	268.3	4 hrs, 28 min	70 seconds/applicant

*Logic behind 13 clicks to download 3 recommendations*

Start: candidate listing page (-> = "click")	Clicks to download 3 recommendations for an applicant
-> Candidate detail	1
-> Recommendation listing	2
-> Recommendation #1 page	3
-> Download file	4
-> Back to recommendation listing	5
-> Recommendation #2 page	6
-> Download file	7
-> Back to recommendation listing	8
-> Recommendation #3 page	9

-> Download file	10
-> Back to recommendation listing	11
-> Back to candidate detail	12
-> Back to candidate listing page	13
<b>Total</b>	<b>13 clicks</b>

## 2. Checking for new recommendations

A second problem arises when checking for new recommendations. On the candidate listing pages, there isn't a "dashboard" set-up where a reviewer may see which recommendations are still outstanding.

In order to look for new recommendations, a reviewer must again go to all of the individual recommendation listing pages. This would require a minimum of 4 clicks per applicant, or 920 clicks (4 clicks x 230 applicants.) This click count would increase if the reviewer recognized\* that a new application had arrived and clicked to download it.

\* In this case, we're assuming that the reviewer identified a recent recommendation by its timestamp. The links to the individual recommendation pages are labeled "Anonymous", with an associated timestamp for when the document was submitted.

## 3. No Options for "Bulk Action"

There is no "shortcut" to download recommendations. The recommendation pages lack even an attempt at bulk action functionality.

Given that the recommendation pages are significantly disconnected from the core documents in terms of accessibility, these critical application materials should be included in some type of bulk action.

## 4. Conclusion

Similar to the core documents, it takes an inordinate amount of time to download recommendations. These documents have the added disadvantage of thousands of extra clicks to access the PDF files.

In addition, without clicking 4 times per candidate and checking timestamps, there is no method to learn if a new recommendation has become available.

Lastly, recommendations were not included in any type of bulk action to consolidate and download PDF files.

## 5. Possible Fixes

Include the recommendation statuses as well as download links available on the candidate listing pages.

Specifically, list each recommender's name/affiliation on the candidate listing pages as well as whether he/she has sent in a document. If the recommendation has been submitted, include a link to download it.

For the "Possible Fix" for bulk actions described in the previous section, include recommendations as part of a candidate's consolidated PDF file.

### **C. Linking Applicant-Entered References to Recommendation files**

In order to assist the faculty search committee, scripts were written to programmatically check whether a recommender had submitted a recommendation.

However, this scenario often occurred:

(a) The candidate entered a recommender's name/email that appeared under the candidates "Summary" tab web page

(b) The recommender had to re-enter his/her name/email that appeared on the Referee form web page.

(c) Scripts attempted to match the (b) recommender name/email on the referee form to the appropriate recommender listed in the (a) summary tab. However, entries for (a) and (b) often didn't match. For example:

- Email addresses entered by candidates differed from those entered by recommenders. (e.g. The recommender responded with a different email than the one used by the candidate, or had an assistant submit the recommendation with a departmental email.)

- Names entered by candidates differed from those entered by recommenders. A full name may have been used in part (a) but a nickname in part (b), etc. (The name matching was case-insensitive.)

A programmatic check matched most entries but many still needed manual intervention. (A visual check was used for candidates that only matched by last name.)

(d) In at least 3 cases, the same recommender uploaded the same document twice—with each upload given a different entry under the "Recommendations Tab." Since all recommender inks under this tab are labeled "Anonymous," this led to some confusion.

Overall, staff members failed to detect a reference id or some type of unique value to connect the (a) recommender information entered by the candidate and the (b) recommender's self-entered information.

This may be part of the reason recommendation uploads are marked as "Anonymous" under a candidate's "Recommendations" tab.

(This undertaking of matching candidate-entered references to their documents was not "normal" functionality but was included since it may relate to the references being labeled as "Anonymous.")

#### **D. Form Validation**

In two instances, data submitted by applicants and references was not properly evaluated, or was missing. These cases are described below:

(1) Email Addresses

At least 15 email addresses of references, entered by both candidates and recommenders, were not valid. In 3 cases, the email field contained a sentence. In other instances, there were typos. Examples included commas in email addresses and lack of an "@" sign.

In addition, in at least two instances, the email field contained two email addresses separated by a comma.

**In cases of candidates entering invalid recommender email addresses, the recommenders never receive emails requesting recommendations.**

**Consequently, the candidates did not receive recommendations until being contacted by MCB staff.**

Email address validity is a basic web form check that should be included.

(2) Candidate Job Titles

In previous MCB searches, a candidate's current job title was required on the web entry form. In addition, faculty requested that this piece of information be displayed prominently in both Excel spreadsheets and candidate listing pages on the web.

For this search, title appears to have been an optional field. A significant percentage of candidates left the title blank or entered "dr."

#### **E. End Note**

This year, due to the many clicks and downloads required to access candidate documents, the MCB staff team spent an inordinate number of hours on administrative tasks related to ARIES.

However, given that the pieces of functionality and/or data described in the "Possible Fixes" already exist in other parts of ARIES, we are confident that this software will improve.

We clearly see how Aries will aid our future faculty searches and we appreciate the opportunity to share our experience with the initial implementation.