

August 27, 2010

Automated Student Matching (ASM)

Summary

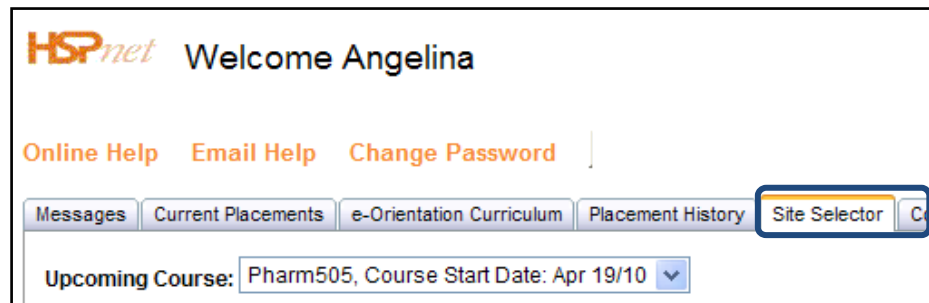
The process for assigning students can be streamlined through the ASM feature which assigns students to a placement based on student preferences (ranked choices) and (as more algorithms are developed) to other variables such as language fluency or vehicle requirement. To address the unique needs of each educational program and cohort of students, the ASM features allows the Placing Coordinator to use a combination of automated and manual assignment in any course.

Appendix 1 provides a list of the available matching algorithms and sample scenarios for their use.

Background

Student preferences can be entered by students who login to HSPnet and review available placements in their Site Selector tab.

Students can also enter a comment under “Special circumstances”, such as a requirement for carpooling or scheduling limitations.



Step 1 – Review status of the Student PR Selector


To prepare for automated matching, ensure that:

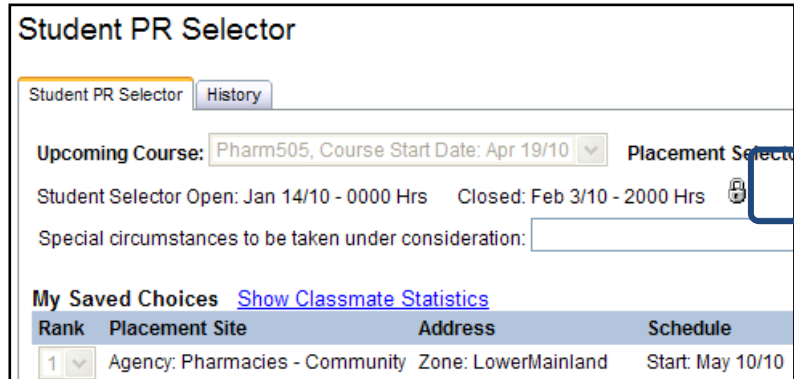
- The Student PR Selector for the course is closed, as indicated by the green icon in **Cohorts**:
- Review student selections in the **Assignment Worksheet** to ensure that all eligible students have entered their selections. In the example below, one student has not saved any choices.



| Sec | Student (16 shown) | Key | Assigned | | | Status | Edit All Save All |
|-----|------------------------------|-----|----------|-----|------|--------|--|
| | | | Site | Svc | Dest | | |
| | Jolie_A | | | | | 2 ! | |
| | Macdonal...D | | - | - | - | | |
| | Milton_F | | - | - | - | 3 | Considerations: I have childcare issues and need to be close to home |

- Hover on the Comment icon ! to review any “Special circumstances” as entered by students during their selection.

- d. View a student's saved choices by clicking ; this opens a read-only copy of their saved choices, identical to the student's view.
- e. Click the "unlock" icon to make changes to a student's saved choices, for example to ensure that a student's selections meet curriculum requirements. *You will be warned that changes by the educational program are saved in the History tab for audit purposes.*



The screenshot shows the 'Student PR Selector' interface. It has two tabs: 'Student PR Selector' (active) and 'History'. Under the active tab, there is a section for 'Upcoming Course' with a dropdown menu showing 'Pharm505, Course Start Date: Apr 19/10'. To the right is a 'Placement Selector' icon. Below this, it shows 'Student Selector Open: Jan 14/10 - 0000 Hrs' and 'Closed: Feb 3/10 - 2000 Hrs'. There is a text input field for 'Special circumstances to be taken under consideration:'. Below that is a section for 'My Saved Choices' with a link for 'Show Classmate Statistics'. At the bottom, there is a table with columns: Rank, Placement Site, Address, and Schedule. The table contains one row: Rank 1, Placement Site 'Agency: Pharmacies - Community', Address 'Zone: LowerMainland', and Schedule 'Start: May 10/10'.



Step 2 – Manage Exceptions

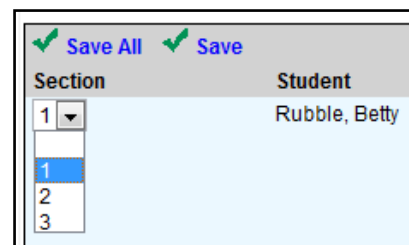
It is recommended that you manage exceptions to automated matching before using the ASM feature. See the Quick Reference guide entitled *Student Site Selector* for the detailed steps to withhold a site from matching. Exceptions may include:

- **Withholding** Sites from ASM, in case they are needed as a “backup” or for students with special considerations;
- **Manual assignment** if needed, for example to:
 - Respond to a request for special considerations;
 - Meet the curriculum needs of students with missing requirements.

Step 3 – Review Enrollment

Before proceeding with ASM you may need to review the enrolled students to ensure they are eligible for placement in the course.

- a. Click **Cohorts** → **Enrollment** for the course to be matched.
- b. Review the students registered to ensure that all are eligible and copied to the appropriate worksheet (status of “Grp” or “Work”). If any students are not eligible at this time:
 - If status is “Grp” or “Work”, select the student's checkbox and choose the Action “Undo Copy to Worksheet”.
 - Re-select their checkbox and choose the correct Action to **waive** (from this course only) or to **remove** the student (all unassigned courses).
- c. If you use Sections to break the Cohort into sub-groups, review the **Section** assignments to ensure they are up-to-date for students in this course.
 - Click  to Edit a single student, or click **Edit All** to change multiple section assignments.
 - Select a numbered Section from the dropdown for one or more students, and click  to save.



The screenshot shows a table with two columns: 'Section' and 'Student'. At the top, there are two green checkmark icons with the text 'Save All' and 'Save'. The table has one row with '1' in the 'Section' column and 'Rubble, Betty' in the 'Student' column. To the left of the 'Section' column is a dropdown menu with options 1, 2, and 3. The '1' option is selected and highlighted in blue.



TIP – Sections can be used during ASM to **mix** students or to **combine** students during a random match for a Group placement. For example Sections can be used to:

- **Mix** students with different learning needs; or
- **Combine** students who want to be placed together for a project or for carpooling reasons.

Step 4 – Perform the Automated Match

a. Click **Cohorts** → **Assignment Worksheet** or for the course to be matched.

b. Select the checkbox for eligible students, and choose the Action option of “Match Selected Students”.

c. Select an ASM algorithm to be applied; in the example above the students will be matched on the basis of their ranked choices only; no other variables will be applied.

d. Click the Glossary to view an online explanation of the available algorithms.

NOTE: For the algorithm chosen in this example, only students with saved choices will be matched because the algorithm is based on preferences. Students who did not save any choices (e.g. Milton) would be left unmatched after this algorithm is run (to be matched manually) because their preferences are not available.

e. Click **Submit** to proceed with the automated match, which will be performed five times. When generation is complete, a window will open to display the five sets of results:

f. Click **Undo** to discard the match results and return to the **Assignment Worksheet**, for manual assignment or to run the match again with the same or to try another algorithm.

| | # | % | # | % | # | % | # | % | # | % |
|--|----|------|----|------|----|------|----|------|----|------|
| Students with 1st choice | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% |
| Students with 2nd choice | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% |
| Students with 3rd choice | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% | 1 | 33% |
| Students with 4th choice | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Students with one of their top 4 choices | 3 | 100% | 3 | 100% | 3 | 100% | 3 | 100% | 3 | 100% |
| Best Match* | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Total Automatic Matches | 3 | 100% | 3 | 100% | 3 | 100% | 3 | 100% | 3 | 100% |
| Unmatched Students | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Students excluded from ASM | 12 | | 12 | | 12 | | 12 | | 12 | |
| Total Students | 15 | | 15 | | 15 | | 15 | | 15 | |

Select preferred result: 1 2 3 4 5


* applies only to matching algorithms that attempt a "best match" after attempting to make an exact match

g. To apply one of the five match results, select a radio button (1 to 5) under the preferred set and click **Save Preferred Result**.

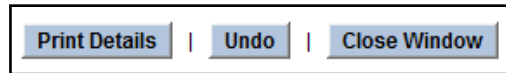
NOTE: After a preferred result is selected, the other results are no longer available but the “Undo” option is still available should you wish to discard the selected result and generate a new match.

h. Close the window to refresh the **Assignment Worksheet** and display the student assignments.

NOTE: at this point the assignments are “draft” only, and are not finalized (or visible to anyone) until you confirm them.


- i. Students with a successful match will display the “Automated Match” icon  (which can be clicked at any time to view the student’s saved choices).



NOTE: You can review the matching statistics at any time after ASM is run, by clicking the link (see screen capture above) for [Automated Matching Results](#). The window displays the match statistics (for the single selected result) plus buttons to:

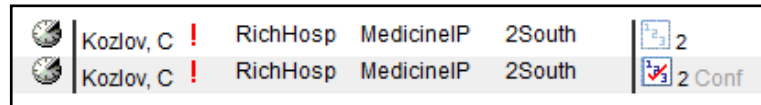






- **Undo** assignment of all automated matches and discard them; and
- Print an **Excel list** each student, their ASM assignment, and its rank within their saved choices.

Step 5 – Finalize Assignments

- a. To finalize the ASM assignments, select the checkbox for one or more students and choose the appropriate Action:
- Confirm Assignments - finalizes the match, makes it visible in the **Student Welcome** screen (in their “Upcoming Placements” tab), and **releases student name to their receiving site**;
 - Temporarily Confirm Assignment – finalizes the match and student name becomes visible in your Outbox, but placement status is not yet confirmed **and student name is NOT yet released**.
- b. If you need to manually change a student’s automated match at any time, click Edit  and change their automatic assignment to “blank” (for manual reassignment later) or select another placement from the dropdown. Click **Save All** to continue and view the results.

In this example, the student’s ASM icon has changed from  to , reflecting that a manual assignment was done, *and a red warning is*



| | | | | | |
|---|-----------|----------|------------|--------|--|
|  | Kozlov, C | RichHosp | MedicineIP | 2South |  2 |
|  | Kozlov, C | RichHosp | MedicineIP | 2South |  2 Conf |

displayed because the selected placement is already assigned to another student. Before confirming the manual assignment, the student must be reassigned to an available space or the other student must be unassigned to make their space available.

Things to Remember

- All students in the worksheet should have either a manual or automated assignment. If any students in the worksheet are not to be assigned in the course, they should be un-copied from the **Assignment Worksheet** (via the Action dropdown) and removed from the Cohort (via **Enrollment**) if they are not continuing with their classmates.

You have now completed the process for automated matching and assignment of students in HSPnet. If you have any questions or suggestions for improving this feature, please let us know.

HSPnet Team

Health Sciences Placement Network
Email: support@hspcanada.net

Appendix 1 - Available Matching Algorithms

| Algorithm Name | Worksheet | Uses and Results |
|-------------------------------------|---------------------|--|
| Student Selections only | Individual or Group | <p><i>Used when student preferences are the sole variable for matching students.</i></p> <ul style="list-style-type: none"> Assigns the selected students to one of their saved choices IF the site is available: <ul style="list-style-type: none"> Status is accepted or confirmed, and Placement is not yet assigned to another student (manually or via ASM). A selected student would be left unmatched if: <ul style="list-style-type: none"> none of his/her choices are available, or student had no saved choices, or there are insufficient spaces for selected students |
| Student Selections + City/Date/Zone | Individual or Group | <p><i>Used when student preferences are the sole variable for matching students, and when it is helpful or considered more equitable for students if ASM proposes the “next best” match.</i></p> <ul style="list-style-type: none"> Assigns students to one of their saved choices if the site is available (see above) OR to a placement that is a “close match” to their saved choices, based on City, Start Date (rotation), and Zone if entered (e.g. Lower Mainland or Region xxx). Example: a student with 3 saved choices in Edmonton would be matched to a site in Edmonton, and if none available then to a site in the same Zone, and if possible in the same rotation (start date). No students would be unmatched unless there are insufficient spaces for the selected students |
| Random Match | Individual or Group | <p><i>Used when student preferences do not apply, because preferences are not collected or unavailable from students in time for automated matching, or they are not a consideration of the placement process.</i></p> <ul style="list-style-type: none"> Student preferences are not considered during a random match (even if they are available). No students would be unmatched unless there are insufficient spaces for the selected students |
| Random Match – Mix sections | Group | <p><i>Used when student preferences do not apply (see above) AND when students assigned to a group should represent a mix of characteristics such as learning style or experience level.</i></p> <p>Prerequisite: students must be allocated to a Section in the Enrollment screen – see Step 3 of this Guide</p> |
| Random Match – Combine sections | | <p><i>Used when student preferences do not apply (see above) AND when students assigned to a group should have similar characteristics such as experience level or commuting requirements (e.g. carpooling).</i></p> <p>Prerequisite: students must be allocated to a Section in the Enrollment screen – see Step 3 of this Guide</p> |

* All descriptions of results assume that (1) matches are applied to Accepted or Confirmed placements only and (2) that withheld placements are excluded from automated matching