The 2020 AST Education Needs Assessment Survey was distributed to all AST members from February 6 to March 6, 2020. The survey included a topical specialty section based on each of AST’s Communities of Practice (COP).

249 participants with 5-or-less years’ experience began the 2020 Education Needs Assessment survey and 209 completed the corresponding “For Trainees Only” section. A breakdown of the information gathered from these participants is provided in this report.

I. “For Trainees Only” Section Participants

Experience Level of “For Trainees Only” Participants:

Participants were asked to “Please enter your level of experience/years in practice.” Based on the 249 participants who were eligible for the “For Trainees Only” section, the chart below outlines the experience of those who qualified.

<table>
<thead>
<tr>
<th>Level of Experience</th>
<th>No# of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not yet in training</td>
<td>5</td>
</tr>
<tr>
<td>In training (resident)</td>
<td>16</td>
</tr>
<tr>
<td>In training (fellow)</td>
<td>46</td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>182</td>
</tr>
</tbody>
</table>

Participants in the “<5 years” experience category represented 24.4% of overall participants across the entire 2020 Education Needs Assessment survey. This was the largest group of participants by “Experience Level,” beating out participants in the “6-10 years” and “21+ years” groups (both with approximately 19.7% of survey participants).

Approximately 33.4% of all 2020 Education Needs Assessment participants qualified to take the “For Trainee Only” survey section.
Role of “For Trainees Only” Participants:

Participants were asked, “Which best describes you? (please choose one).” Based on the 249 participants who qualified for the “For Trainees Only” section, the chart below outlines the roles that were represented (results from all participants in the survey are provided for comparison).

<table>
<thead>
<tr>
<th>Role</th>
<th>“For Trainees Only” Participants</th>
<th>Overall Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician/Primarily Research</td>
<td>26 (10.4%)</td>
<td>65 (8.7%)</td>
</tr>
<tr>
<td>Physician/Primarily Clinical</td>
<td>105 (42.2%)</td>
<td>316 (42.4%)</td>
</tr>
<tr>
<td>Surgeon/Primarily Research</td>
<td>3 (1.2%)</td>
<td>12 (1.6%)</td>
</tr>
<tr>
<td>Surgeon/Primarily Clinical</td>
<td>14 (5.6%)</td>
<td>45 (6.0%)</td>
</tr>
<tr>
<td>Administrator</td>
<td>5 (2.0%)</td>
<td>34 (4.6%)</td>
</tr>
<tr>
<td>Advanced Practice Provider</td>
<td>14 (5.6%)</td>
<td>43 (5.8%)</td>
</tr>
<tr>
<td>Histocompatibility Specialist</td>
<td>5 (2.0%)</td>
<td>23 (3.1%)</td>
</tr>
<tr>
<td>Nurse/Transplant Coordinator</td>
<td>1 (0.4%)</td>
<td>16 (2.1%)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>52 (20.9%)</td>
<td>104 (14.0%)</td>
</tr>
<tr>
<td>Psychologist/Psychiatrist</td>
<td>5 (2.0%)</td>
<td>12 (1.6%)</td>
</tr>
<tr>
<td>Social Worker</td>
<td>3 (1.2%)</td>
<td>19 (2.6%)</td>
</tr>
<tr>
<td>Researcher/Scientist</td>
<td>11 (4.4%)</td>
<td>37 (5.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (2.0%)</td>
<td>19 (2.6%)</td>
</tr>
</tbody>
</table>

Affiliation of “For Trainees Only” Participants:

Participants were asked what is their “Affiliation (please choose one).” Based on the 249 participants who qualified for the “For Trainees Only” section, the chart below outlines the affiliations that were represented (results from all participants in the survey are provided for comparison).

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>“For Trainees Only” Participants</th>
<th>Overall Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>156 (62.7%)</td>
<td>427 (57.3%)</td>
</tr>
<tr>
<td>Government or Military</td>
<td>3 (1.2%)</td>
<td>9 (1.2%)</td>
</tr>
<tr>
<td>Hospital</td>
<td>81 (32.5%)</td>
<td>256 (34.4%)</td>
</tr>
<tr>
<td>Industry</td>
<td>3 (1.2%)</td>
<td>16 (2.1%)</td>
</tr>
<tr>
<td>Organ Procurement Organization</td>
<td>2 (0.8%)</td>
<td>15 (2.0%)</td>
</tr>
<tr>
<td>Stand-alone Private Practice</td>
<td>3 (1.2%)</td>
<td>13 (1.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.4%)</td>
<td>9 (1.2%)</td>
</tr>
</tbody>
</table>
II. TYF COP’s “For Trainees Only” Section Data

2020 Education Needs Assessment Survey participants who indicated they were “not yet in training,” “in training,” or “under 5 years” in practice were asked to provide additional information on their educational needs. Here are the results from the 209 eligible participants who completed this section.

TYF COP Question on Ongoing Education: Eligible participants were asked “Is there anything else that would be valuable for your ongoing education as a trainee/resident/fellow/young professional that has not already been addressed in this survey? (For example, anything that you need/anticipate needing to know as an attending that your current educational resources do not adequately address.)” Here are the submitted comments (this section was optional):

- Access to meeting documents and presentations at a discounted rate.
- Adding new topics of cell free testing and gene expression studies.
- Additional information regarding the workings of UNOS and organ allocation in different regions.
- Any course on leadership training in academic medicine (online seminars preferred) would be good.
- As a heart transplant pharmacist in Brazil, where there is only one residence program to transplant pharmacists and it only covers kidney and liver, it would be great to have scholarships and opportunities abroad where I could learn from other centers experiences and help develop my own center back home.
- Billing [submitted by 2 separate participants]
- Business aspect of practicing as a transplant nephrologist. Lack of data in this regard has led to many nephrologist leave transplant and practice as a general nephrologist. Mentorship.
- Course similar to renal transplant curriculum but dedicated to cardiac transplant.
- Discounts to attend meetings and access to educational material.
- Education regarding living donor liver transplant.
- Give more pediatric options at AST Fellows' Symposium. Get word out to more pediatric centers. I attended as a young faculty because I did not know about it until last year of fellowship. It is a wonderfully designed program and more pediatric trainees should make use of it. PCOP Education Subcommittee is happy to work with you to facilitate.
- Guidance on handling donor calls, perhaps a repository of situations and an approach to each, e.g. a calcified granuloma in a liver transplant patient, and what considerations should be undertaken.
- How to increase and improve your networking. Burnout among transplant fellows.
- I appreciate that COPs are starting Mentoring programs.
- I would like to learn more about how to manage and grow a kidney transplant program.
- Interactive education and case scenarios that are aimed at a fellows educational level.
- Job applications / opportunities.
- Mentorship programs.
- More teaching in social media, more podcasts by experts.
- No; A good review book or eBook.
- Opportunities to contribute to education, publication of AST.
- Probably some more understanding of regulations around procurement and UNOS criteria.
- Seed grant funding for clinical / ethics / policy research.
- The basics of HLA and other non-pharmacy specialties - what does a pharmacist need to know?
- The current educational course ID materials that can be purchased on AST are too basic and not worthwhile for an ID trained or trainee, they only work for a non-ID person, a separate curriculum from the ID COP would be great or some second level or master's course would be beneficial.
- Transplant Epidemiology Methodology.
- Would like for trainees to get an email with guide of all current guidelines (like all, etc.)
- Would like to know if there is a platform to ask questions similar to ASN’s open forum.
A list of important career and knowledge development opportunities was created for the 2020 Needs Assessment Survey specialty sections by TYF COP Leadership and the AST Education Committee. Eligible participants were asked to “Rate each opportunity’s importance to you” as either 1) “Not interested,” 2) “Interested but have sufficient knowledge” or 3) “Interested & want/need to learn more.”

TYF COP Career and Knowledge Development Opportunities – Overall Ranking: The topic list has been ranked below based on a weighted mean score of up to 3.0, with “Interested & want/need to learn more” weighted highest, “Interested but have sufficient knowledge” weighted next highest, and “Not interested” weighted lowest (out of 209 results).

1. Networking opportunities with peers: 2.64
2. Choosing and working with mentors in training and early career: 2.57
3. Networking opportunities with mid-level and senior faculty: 2.55
4. Seminars focused on career pathways in transplantation: 2.44
5. Funding pathways and opportunities for junior investigators in transplantation: 2.43
6. Role of industry in transplantation: 2.31
7. Team science in transplantation: 2.28
8. Searching, interviewing, and obtaining a position in transplant: 2.19

TYF COP Career and Knowledge Development Opportunities – “Interested and want/need to learn more” Only: The topic list has been ranked below based exclusively on the number of “Interested and want/need to learn more” results (out of 209 results).

1. Networking opportunities with peers: 157
2. Networking opportunities with mid-level and senior faculty: 151
3. Choosing and working with mentors in training and early career: 148
4. (Tied) Funding pathways and opportunities for junior investigators in transplantation: 139
   (Tied) Seminars focused on career pathways in transplantation: 139
5. Role of industry in transplantation: 122
6. Team science in transplantation: 118
7. Searching, interviewing, and obtaining a position in transplant: 105
8. Searchable database of transplant training programs: 93

TYF COP Career and Knowledge Development Opportunities – “Not interested” Only: The following topics received the highest number of “Not interested” results (out of 209 results).

- Searchable database of transplant training programs: 67
- Searching, interviewing, and obtaining a position in transplant: 65
- Team science in transplantation: 59
- Role of industry in transplantation: 57
- Funding pathways and opportunities for junior investigators in transplantation: 49
- Seminars focused on career pathways in transplantation: 48
TYF COP Question on AST’s Fellows Symposium: Eligible participants were asked “Have you attended the AST Fellows Symposium on Transplantation Medicine?” Here are the results.

<table>
<thead>
<tr>
<th>Attended Fellows?</th>
<th>No# of Times Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>97</td>
</tr>
<tr>
<td>No, but I viewed meeting slides or videos online after the conference</td>
<td>21</td>
</tr>
<tr>
<td>No</td>
<td>91</td>
</tr>
</tbody>
</table>

Please see the pie charts on the following pages for a topic-by-topic breakdown of participant interest in each topic listed in the TYF COP Career and Knowledge Development Opportunities section.

If you have follow-up questions, or would like additional details on a result, please contact the AST Education Program Manager, Brian Valeria (bvaleria@myast.org) for more information.
Networking opportunities with peers

- Not interested, 11.48%
- Interested but have sufficient knowledge, 13.40%
- Interested & want/need to learn more, 75.12%

Networking opportunities with mid-level and senior faculty

- Not interested, 17.70%
- Interested but have sufficient knowledge, 10.05%
- Interested & want/need to learn more, 72.25%
Searching, interviewing, and obtaining a position in transplant

- Not interested, 31.10%
- Interested but have sufficient knowledge, 18.66%
- Interested & want/need to learn more, 50.24%

Choosing and working with mentors in training and early career

- Not interested, 13.40%
- Interested but have sufficient knowledge, 15.79%
- Interested & want/need to learn more, 70.81%
Searchable database of transplant training programs

- Interested & want/need to learn more, 44.50%
- Interested but have sufficient knowledge, 23.44%
- Not interested, 32.06%