2020 Education Needs Assessment Report – COTS

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).

204 participants began the "Transplant Science" specialty section and 184 completed the section. A breakdown of the information gathered from these participants is provided in this report.

I. "Transplant Science" Specialty Section Participants

Role of Participants:

Participants were asked, "*Which best describes you? (please choose one)*." Based on the 204 participants who started the COTS specialty section, the chart below outlines the roles that were represented (results from all participants in the survey are provided for comparison).

Role	Specialty Participants	Overall Participants
Physician/Primarily Research	22 (10.8%)	65 (8.7%)
Physician/Primarily Clinical	83 (40.7%)	316 (42.4%)
Surgeon/Primarily Research	2 (1.0%)	12 (1.6%)
Surgeon/Primarily Clinical	18 (8.8%)	45 (6.0%)
Administrator	2 (1.0%)	34 (4.6%)
Advanced Practice Provider	8 (3.9%)	43 (5.8%)
Histocompatibility Specialist	17 (8.3%)	23 (3.1%)
Nurse/Transplant Coordinator	5 (2.5%)	16 (2.1%)
Pharmacist	19 (9.3%)	104 (14.0%)
Psychologist/Psychiatrist	1 (0.5%)	12 (1.6%)
Social Worker	0	19 (2.6%)
Researcher/Scientist	24 (11.8%)	37 (5.0%)
Other	3 (1.5%)	19 (2.6%)

Affiliation of Participants:

Participants were asked what is their "*Affiliation (please choose one.)*" Based on the 204 participants who started the COTS specialty section, the chart below outlines the affiliations that were represented (results from all participants in the survey are provided for comparison).

Affiliation	Specialty Participants	Overall Participants
Academic	122 (59.8%)	427 (57.3%)
Government or Military	3 (1.5%)	9 (1.2%)
Hospital	58 (28.4%)	256 (34.4%)
Industry	5 (2.5%)	16 (2.1%)
Organ Procurement Organization	6 (2.9%)	15 (2.0%)
Stand-alone Private Practice	6 (2.9%)	13 (1.7%)
Other	4 (2.0%)	9 (1.2%)

Experience Level of Participants:

Participants were asked to *"Please enter your level of experience/years in practice."* Based on the 204 participants who started the COTS specialty section, the chart below outlines the levels of experience that were represented (results from all participants in the survey are provided for comparison).

Level of Experience	Specialty Participants	Overall Participants
Not yet in training	1 (0.5%)	5 (0.7%)
In training (resident)	3 (1.5%)	16 (2.1%)
In training (fellow)	11 (5.4%)	46 (6.2%)
<5 years	49 (24.0%)	182 (24.4%)
6-10 years	33 (16.2%)	147 (19.7%)
11-15 years	32 (15.7%)	123 (16.5%)
16-20 years	25 (12.3%)	81 (10.9%)
21+ years	50 (24.5%)	145 (19.7%)

II. COTS's "Transplant Science" Specialty Section Data

A list of important and timely topics was created for the 2020 Needs Assessment Survey specialty sections by COTS Leadership and the AST Education Committee. Participants were asked to "*Rate each educational topic's importance to you*" as either 1) "*Not interested*," 2) "*Interested but have sufficient knowledge*" or 3) "*Interested & want/need to learn more*."

Here are the results from the 184 participants who completed this specialty section.

COTS Specialty Topics – 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 184 results).

1. Gene expression profiling in transplantation: benefits and pitfalls of different platforms (microarray, nano string): 2.53
2. Benefits and Limitations of profiling circulating blood cells to understand human immune responses: 2.52
3. Power calculations and biostatistics for experimental transplant immunology: 2.42
4. CRISPR/Cas system for genome editing in transplantation: 2.41
5. Micro RNA-mediated control of alloimmunity: 2.40
6. Computational immunology (new platforms for data analysis/ SPADE/ self-organizing maps, etc.): 2.31
7. Advances in flow cytometry: CyTOF vs. Spectral Flow Cytometry: 2.28
8. Pyrosequencing of microbiota: 2.01

COTS Specialty Topics – "*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 184 results).

1. Gene expression profiling in transplantation: benefits and pitfalls of different platforms (microarray, nano string): 133
2. Benefits and Limitations of profiling circulating blood cells to understand human immune responses: 127
3. (Tied) CRISPR/Cas system for genome editing in transplantation: 121
   (Tied) Power calculations and biostatistics for experimental transplant immunology: 121
5. Micro RNA-mediated control of alloimmunity: 119
6. Computational immunology (new platforms for data analysis/ SPADE/ self-organizing maps, etc.): 112
7. Advances in flow cytometry: CyTOF vs. Spectral Flow Cytometry: 104
8. Pyrosequencing of microbiota: 84

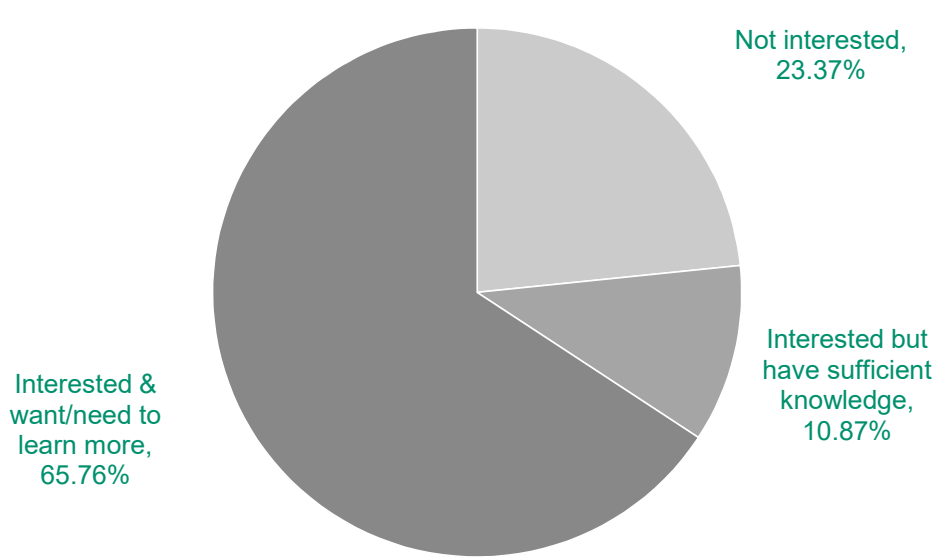
COTS Specialty Topics – "Not interested" Only: The following topics received the highest number of "*Not interested*" results (out of 184 results).

- Pyrosequencing of microbiota: 82
- Computational immunology (new platforms for data analysis/ SPADE/ self-organizing maps, etc.): 55
- Advances in flow cytometry: CyTOF vs. Spectral Flow Cytometry: 53

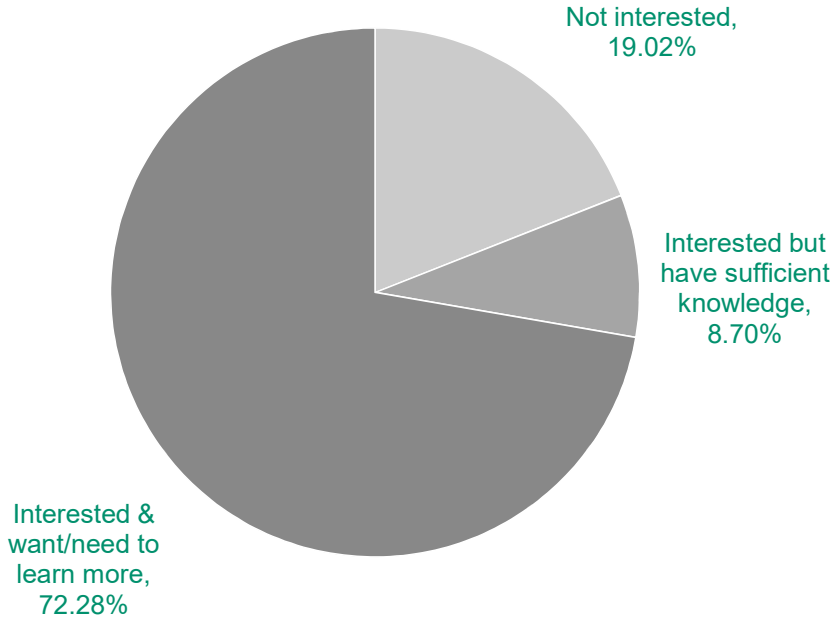
Please see the pie charts on the following pages for a topic-by-topic breakdown of participant interest in each topic.

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.

Power calculations and biostatistics for experimental transplant immunology



Gene expression profiling in transplantation: benefits and pitfalls of different platforms (microarray, nano string)



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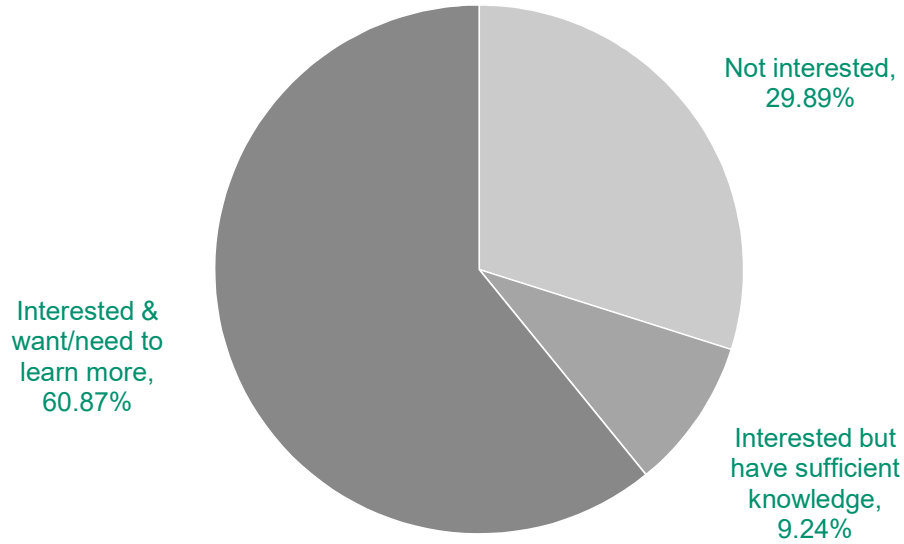
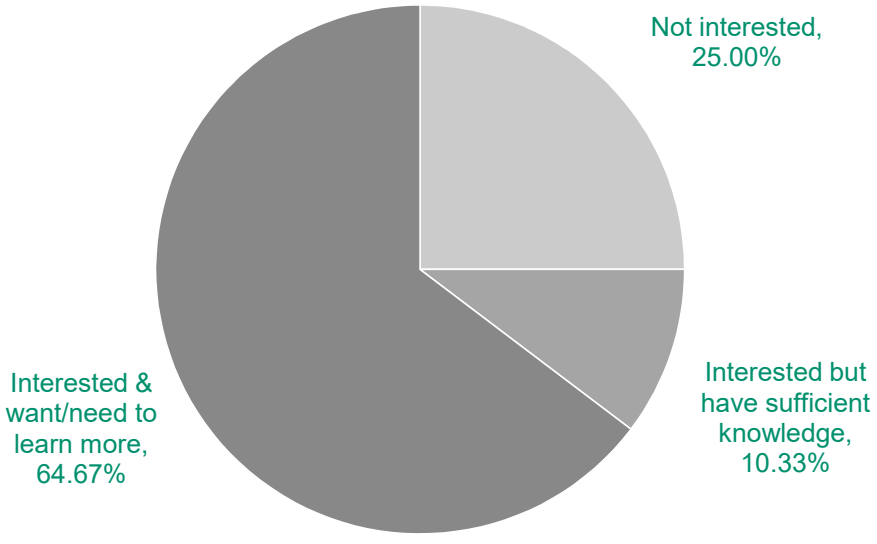
Computational immunology (new platforms for data analysis/ SPADE/ self-organizing maps, etc.)



Micro RNA-mediated control of alloimmunity



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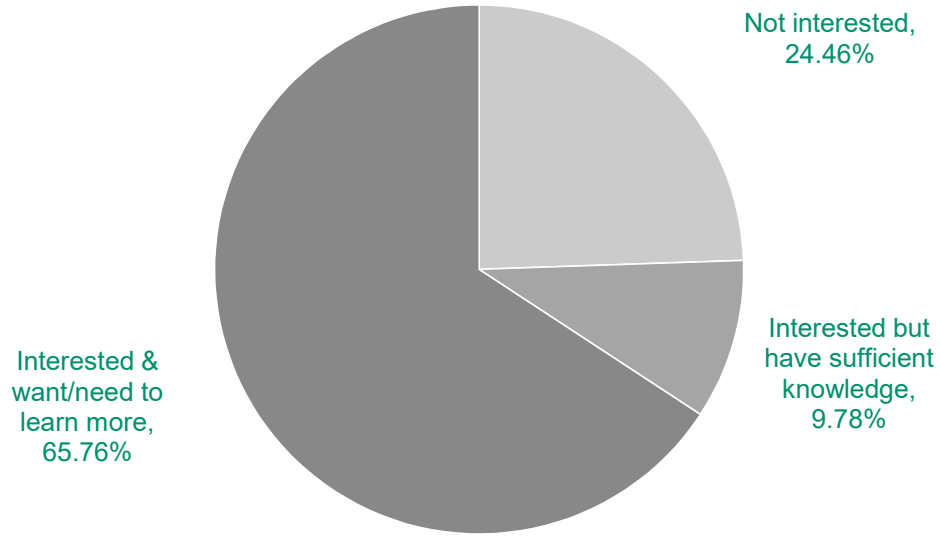
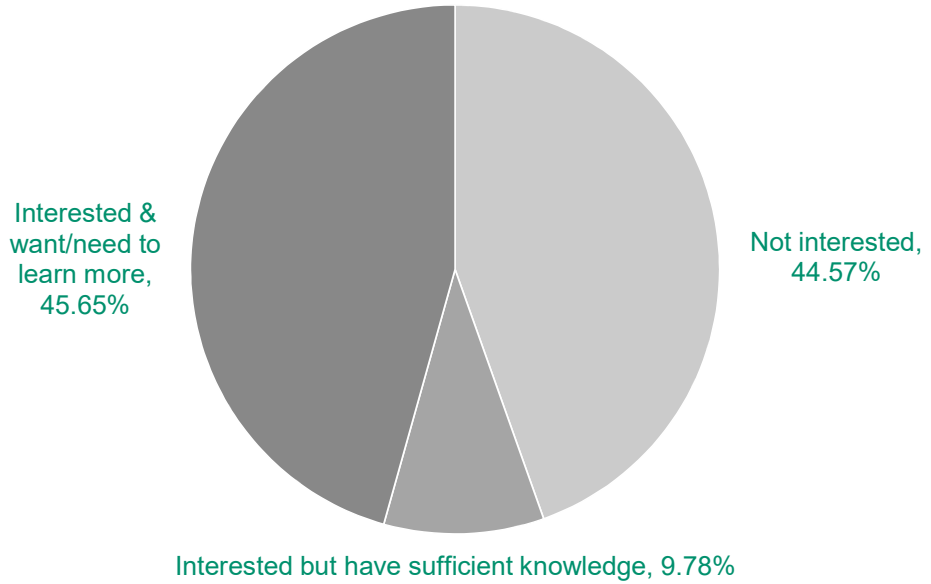
CRISPR/Cas system for genome editing in transplantation



Pyrosequencing of microbiota



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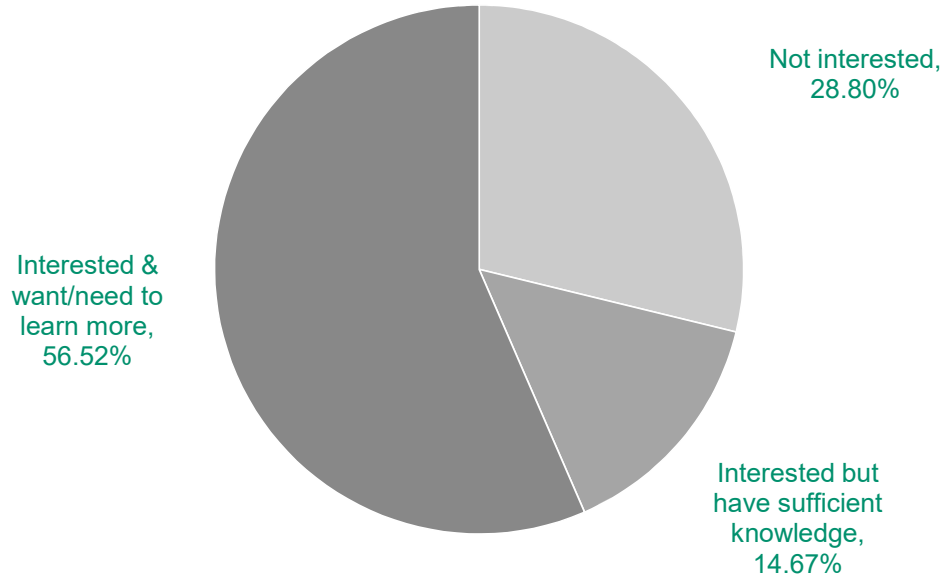
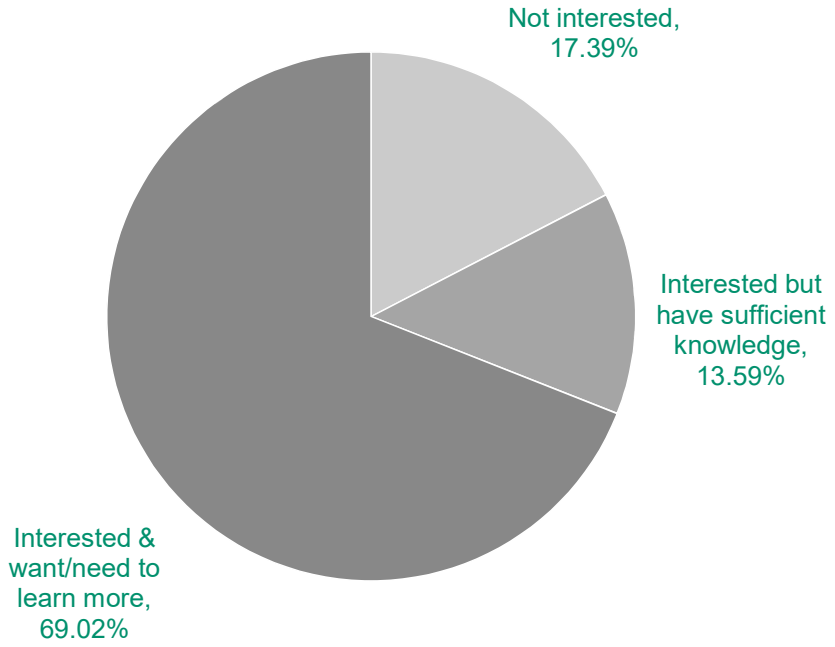
Advances in flow cytometry: CyTOF vs. Spectral Flow Cytometry



Benefits and Limitations of profiling circulating blood cells to understand human immune responses



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