# How to be successful in an academic interview in pediatric oncology: A survey of Children’s Oncology Group (COG) and The International Society of Paediatric Oncology (SIOP) mentors

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Abbreviations key:

|  |  |
| --- | --- |
| **Abbreviation** | **Full term or phrase** |
| COG | Children’s Oncology Group |
| SIOP | International Society of Paediatric Oncology |
| US | United States |
| YI | Young Investigator |

## Abstract:

Background: A successful academic interview has been reported as the most important factor contributing to ranking of candidates for residency. However, little published guidance exists to help a prospective oncologist or researcher give such an interview. The International Society of Paediatric Oncology (SIOP) Young Investigator (YI) Network and Children’s Oncology Group (COG) YI group thus co-sponsored a survey of senior investigators seeking their advice.

### Methods: An electronic survey covering aspects of the academic interview of both trainees and faculty were sent to all current/past mentors serving in the COG YI mentorship program and those registered as mentors in the SIOP YI mentorship program. The responses were quantitatively and qualitatively analyzed.

### Results

The response rate was 43.7% (118/270) from 25 countries. Majority of US interviewers (86.8%) conducted interviews individually, while 74% of non-US interviewers conducted panel interviews or both types equally (P<0.001). Majority of interviewers (83.4%) at least occasionally contacted colleagues for off the record opinions on candidates and 40.9% conducted an internet or social media search. Enthusiasm for the job (97.2%) and being a team player (95.3%) were the qualities most rated as at least moderately important while a priority for work life balance (45.4%) and having interests/hobbies outside of medicine (29.2%) were considered less important. Interviewers provided interview questions, tips for candidates, and key pitfalls to avoid.

### Discussion: Candidates should prepare for their academic interviews in advance, be enthusiastic and honest when giving responses. Detailed guidance for those applying at different career stages and in different countries are provided.

**Introduction**

Interviewing for a training or faculty position in pediatric oncology can be a daunting challenge and there is little published advice on how best to approach it. Academic interviews, whether for a clinical, postdoctoral or faculty position usually constitute formal interviews either with a panel or a series of individuals and may also include the candidate giving a presentation or informal networking opportunities, such as meals. A successful academic interview has been shown to be the most important factor that contributed to the residency rank list in a study from the Children’s Hospital of Philadelphia.1 Getting the interview right is therefore of huge importance for the candidate. The International Society of Paediatric Oncology (SIOP) Young Investigator (YI) Network represents the interests of YIs working in the field of pediatric oncology and as part of the SIOP Annual Congress YI Education day, a session on how best to prepare for an academic job interview in pediatric oncology was planned. Finding little written about this subject, a survey was commissioned of senior mentors from both SIOP and the Children’s Oncology Group (COG) to seek their advice2-6. This was co-sponsored by the SIOP YI Net and the COG YI Committee, and aimed to elicit advice from senior mentors from both SIOP and COG about the different components of the academic interview, identify qualities thought favorable in a prospective candidate, the pitfalls candidates should avoid, and the questions that interviewers commonly asked during interviews.

## **Methods**

An initial prototype version of the survey was created using REDcap , extensively reviewed and trialed by the authors (AE, GB, JM, GD), and amended based on feedback.7 A final version of the survey was then created (Supplemental document 1) and a link to the survey was sent to a merged mentorship list comprised of mid-career to senior SIOP members who volunteered to act as potential mentors to junior faculty within the SIOP YI Mentorship Program, and all previous or currently serving mentors in the COG YI mentorship program. A total of 5 reminders to complete the survey were sent, each a week apart. The study was approved by the Vanderbilt Institutional Review Board and survey responses were de-identified.

The responses were then reviewed and quantitative and qualitative analysis was performed. Comparisons between groups were made using the Chi Square test using the whole ordinal responses rather than dichotomized groups. For the first part of the quantitative portion of the survey, questions were asked to all interviewers about the practices they employ when conducting an academic interview. Since United States (US) was the only country with at least 10 interviewers, statistical comparisons were conducted for interviewers from the US versus (vs.) another country. The survey attempted to capture academic rank of the interviewers, however due to variations in the definitions of rank between countries, we found that time in clinical practice was likely the more reliable classification of a respondent’s seniority. Thus, statistical comparisons were made according to time in clinical practice and gender. For the second part of the quantitative survey, we sought to understand the factors interviewers found to be more important in forming a positive view of the applicant they are interviewing. Recognizing these expectations can change according to the level of training of the applicant, we first asked what types of candidates the interviewer regular interviews. We first assessed if interviewers commonly interviewed post-medical student training applicants for residency/fellowship and/or non-physician post-doctoral positions. We assessed responses for these types of interviews as one large group, but in the analysis did assess if there were different preferences in those who interviewed non-physician post-doctoral students vs. physicians alone. We then additionally asked if interviewers commonly interview faculty candidates (defined as applicants for a job who have completed all training) and assessed their preferences related to those type of interviews.

There were then 4 open-ended questions that all interviewers were asked. Qualitative content analysis was used to analyze the participant’s open ended responses.8 Two researchers (JM, GB) reviewed the data and open codes were developed inductively from the data by both researchers independently. Open codes were grouped into higher order codes for each of the four questions, discussed, and revised. Definitions of each code were then written. The codebook was discussed and further revised before being piloted by each researcher to a 10% sample of the data. Pilot results were compared and minor differences in coding resolved via dialogue. A final version of the codebook was produced and the data set was then coded by both researchers independently using NVivo 12. Results were tabulated and compared and a small number of differences resolved via dialogue.

## **Results**

**Demographics of the Cohort**

The response rate was 43.7% (118/270) for all participants. Among the participants, 34.7% (n=41) were only members of SIOP, 31.4% (n=37) were only members of COG, 30% (n=37) were members of both organizations, and 3 participants did not answer the question. Participants in the survey were from 25 different countries including Armenia (1), Australia (2), Bangladesh (1), Brazil (1), Cameroon (1), Canada (6), Costa Rica (1), Denmark (1), Germany (2), India (6), Indonesia (2), Israel (1), Italy (2), Japan (1), Mexico (4), The Netherlands (2), Pakistan (2), Peru (2), Russia (1), South Africa (1), Spain (4), Sweden (2), Turkey (2), US (67), United Kingdom (2), and one participant did not answer the question. The response rate was lower for US/Canada respondents 32.4% (73/225) versus those from other countries 52.3% (45/86). Ten respondents were from four Lower Middle-Income Countries (LMICs) as defined by the World Bank. Additional characteristics of the participants are provided in Table 1. Participants from the US were significantly more likely to be in clinical practice for over 20 years as compared to those from other countries (70.6% versus 47.0%, P=0.010).

**Interview Procedures**

The majority of interviewers reviewed the prospective applicants’ application in advance (95.8%). However, 0.8% of interviewers preferred to go into the interview without prior knowledge, and 3.4% did not answer the question. These frequencies did not vary between the US and other countries or by time in clinical practice. Interviews were usually conducted individually by the majority of respondents (58.5%); however, 19.5% reported usually conducting interviews as part of a panel, and another 19.5% did both fairly equally (3 didn’t answer the question). In the US, only 13.4% of interviewers reported regularly conducting interviews in panels or doing both equally compared to 74% of those from other countries (P<0.001). Many interviewers reported evaluating a prospective applicant by asking colleagues from the applicants’ institution to give “off the record” opinions (41.7 % reported doing it often, 41.7% occasionally, 10.4% rarely, and 6.1% responded in negative). Several interviewers performed an internet search on the prospective applicant or checked social media (20.9% did it often, 20.0% occasionally, 27.0% rarely, and 32.2% did not do this). The frequency of this did not vary according to gender, time in clinical practice, or being from the US. Several interviewers reported reading the past-publications of the prospective applicant prior to an interview (46.1% did it often, 40.0% occasionally, 10.4% rarely, and 3.5% didn’t do this) and others also reported reading them post-interview (27.8% did it often, 47.8% occasionally, 19.1% rarely, and 5.2% didn’t do this). These findings also did not vary by gender, time in clinical practice, or being from the US. The need to send a “thank you” note after an interview was felt to be at least moderately important by 30.4% (35/115) of interviewers. When asked about a preference for the type of “thank you” note, the preferences were, 9.3% handwritten, 11.0% email, 39.0% equal preference to both, 38.1% no preference, and 3 participants did not answer the question.

**Importance of Applicant’s Interests and Goals**

For the 108 participants who report commonly interviewing post-medical student training applicants for residency/fellowship and/or non-physician post-doctoral positions, enthusiasm for a prospective job was the quality most commonly rated as at least moderately important (97.2%) while the candidate demonstrating an ability to be a team player was the next most commonly rated (95.3%). In a sub analysis, respondents from LMICs felt that the candidate demonstrating a desire to be a leader in the field to be at least moderately important more frequently so than those from non LMIC countries (100% [9/9] LMIC, 52.5% [52/99] non-LMIC P=0.005).

The candidate demonstrating a priority for work-life balance and having interests and hobbies outside of medicine were less likely to be rated as being at least moderately important by respondents (45.4% and 29.2%, respectively). In a sub analysis, respondents who were 21-30 years post their own training were less likely to rate the candidate demonstrating a priority for work-life balance as either very or moderately important (34.6%) compared to interviewers who were 5-10 years, 21-30 years, or 31+ years post training (46.2%, 50% and 45.5%, respectively). Respondents from LMICs rated a candidate’s work-life balance as at least moderately important more often than those respondents from non-LMIC (LMIC 88.9% [8/9] vs. non LMIC 41.1% [41/99], p=0.011).

Participants who commonly interview non-physician post-doctoral applicants found enthusiasm to be very important in greater numbers than those who do not interview those applicants (96.5% vs. 70.0%, P=0.040), and being open-minded about a clinical career less important (29.8% vs. 41.7%, P=0.048). The other responses about interviewing those applying for training positions are provided in Table 2.

For the 88 participants that report commonly interviewing faculty, all interviewers rated enthusiasm for the prospective job as at least moderately important, with this being the most commonly cited quality for a prospective candidate. The ability to be a team player was the second most cited criteria (98.8%), while the candidate being able to clearly articulate their past research was the third (96.6%). In a sub-analysis, there was a trend towards interviewers from LMICs rating a faculty candidate as demonstrating a desire to be a leader in the field to be at least moderately important more frequently so than those from non-LMIC countries, however this was not statically significant (LMIC 100% 5/5 vs non LMIC 65.1% [54/83], p=0.167). As with respondents conducting interviews for residency/fellowship and/or non-physician post-doctoral position, candidates demonstrating a priority for work-life balance and having interest/hobbies outside of medicine were the least likely to be rated as at least moderately important (43.2% and % and 27.9% respectively) by those interviewing faculty candidates; and respondents who were 21-30 years post training were less likely to rate a faculty candidate demonstrating a priority for work-life balance as being either very or moderately important (25%) compared to interviewers who were 5-10 years, 21-30 years, or 31+ years post training (55.6%, 45.5% and 55%, respectively). Interviewers from LMICs who interviewed faculty candidates rated a candidate’s work-life balance as at least moderately important more often than those respondents from non-LMIC (LMIC 100% [5/5] vs. non-LMIC 39.8% [33/83], P=0.013). Other responses about interviewing faculty are provided in Table 3.

**Qualitative analysis**   
For the qualitative analysis, 97 participants completed at least one open-ended question and were included in the analysis: Ninety-one participants listed their favorite questions or questions you would like to ask prospective students or faculty, 96 listed the qualities they most valued in a prospective applicant, 93 provided their best tips they could provide for a prospective applicant and 92 participants listed the biggest pitfalls that a prospective applicant should avoid. All four open-ended questions were answered by 85 participants (87.6%). The majority of interviewers were from the US (57.7%). Fifty interviewers were female (51.6%), 46 were male (47.4%), one respondent preferred not to answer this question (1%). The content codes, number of instances and illustrative quotes for each of the four questions have been provided in Table 4. The full responses to these questions have been provided in Supplemental document 2.

Participant’s favorite questions to ask during interviews fell into three groups: candidates’ past achievements, challenges or their journey up to this point; candidates’ motivation for applying and future plans. Questions regarding future career plans were the most frequently stated, including five- and 10-year plans as well as more ‘off-the-wall’ questions about how a candidate would “change the world.” The candidates’ motivation for applying for the current position was the next frequently stated favorite question. Few participants included questions about the candidate’s life or hobbies away from pediatric oncology.

The majority of the qualities listed by participants as most valuable in a prospective applicant were personal qualities, including enthusiasm, diligence, intelligence, confidence, and humility. Participants also valued key abilities within interviewees, including being a team player, communication and leadership skills. Other qualities listed, but given much lower priority, included having clear goals and plans, specific clinical or research skills, and a good track-record of publications and funding. A candidate’s hobbies or outside interests did not appear to be valued significantly by the interviewers. Some interviewers wrote about the importance of the candidate fitting well within the existing team, and thus having the personality and skills to complement this.

Interviewers reported many different “top tips” for applicants. One key area was in preparation, related to the organization they were applying for, their own work, their future plans, and questions for the interviewer. Of these, preparation related to the organization was most frequently mentioned and included both knowing the institution and taking the time to identify where the applicant would fit within the team. Other “top tips” related to the candidate’s personal characteristics, particularly being confident, enthusiastic, and honest. Sixteen interviewers specifically mentioned the importance of honesty in interviews (16.3%). Interviewers described “top tips” regarding behavior within the interview itself, including being well dressed, relaxed, and memorable, as well as remembering to listen to and answer the questions posed. Some responses related to follow-up, including the need to send handwritten thank you notes, though all participants who provided this specific tip were from the US.

The majority of pitfalls listed by participants were personal characteristics that they found unfavorable. These were sometimes contradictory, for example being confident but not arrogant, being enthusiastic without being overly enthusiastic, not being nervous but not being too relaxed or “slovenly”. This demonstrates a fine line for applicants to walk, particularly given much of this appears dependent upon the individual interviewers. The code “lack of preparation” mostly reflected the opposite of the “top tips” given in the preceding question. However, there were also contradictions here – some interviewers replied that applicants must always ask questions within the interview; whilst others stated that it was ok not to ask questions. In other pitfalls, interviewers stressed the important of not being rude, dishonest, inappropriately dressed, or badmouthing other researchers or institutions.

## **Discussion**

These data give insight into what senior investigators working in pediatric oncology think is important during an academic interview. With the advent of the internet, social media, and email, it is now very easy for interviewers to discover information about a candidate and so applicants should keep this in mind when posting information online. The pediatric oncology world is rather small and its members are well-connected with each other. These results identified that interviewers will contact colleagues at the applicant’s home institution and seek information about them outside what they have submitted in the application packet. The importance of acting with professionalism cannot therefore be overstated. It is not inconceivable that negative views about previous institutions, colleagues or situations expressed by an applicant in either applications or interviews, may be reported back. Similarly, candidates should avoid being too casual in the interview, being rude and talking over the interviewer. As one respondent stated in our survey: “we are definitely judging you.”

The need for careful preparation prior to the interview was highlighted by interviewers. Candidates should extensively research the institution prior to the interview, prepare questions and practice responses to interview questions. A full list of favored interview questions detailed by respondents to the survey can be found in supplementary file 2. That so many interviewers in the survey reported conducting interviews alone is notable, however, this is probably due to the considerable variation in how interviews are conducted in different countries. In the US for example, interviews for pediatric residency are often conducted individually without standardized questions, over a day long visit to the institution during which the candidate will undergo multiple interviews, while in UK they are often centrally conducted through means of a panel interview using rigorously developed standardized questions and may only last a few hours. Therefore individuals should always research the interview conditions prior to the interview9. It is important for a candidate to be honest about their accomplishments and avoid over-selling, or embellishing their achievements.

A candidate’s work-life balance appeared to be of less importance to respondents, particularly those who were 21-30 years post their own training, and those who were from higher and middle-income countries. Although, work-life balance and hobbies are often very important to a prospective applicant, they likely should be less emphasized during an interview unless the interviewer specifically enquires about them. The majority of respondents to the survey were more established mentors, and thus are of the generation who are currently conducting interviews within the pediatric oncology community. We recognize that as the younger generation ages into faculty that opinions on issues such as the priority for work-life balance may change over time. This is a potential area for future research.

Showing enthusiasm for the position being interviewed for and being passionate about clinical and research interests were identified as important qualities for the candidate to communicate, although participants commented on the importance of avoiding insincerity. The need for the candidate to exhibit a determination to succeed or “fire in the belly” was also identified.

It can be difficult for a candidate to strike the right balance between appearing competent and appearing overconfident. Koshy *et. Al.,* recognize this and their suggestions include knowing your own strengths and weakness, anticipate questions that might be asked so you can formulate articulate responses in advance, and stay relaxed but interested on the interview day3. These results similarly highlight the importance of preparation, particularly in preparing questions and researching the institution in advance, and the need to relax during the interview. Anxiety with interviewing can be heightened due to the tighter job market now present in oncology in many countries, however staying calm and confident can help increase the chances of success10.

“Thank you” notes after a job interview are common in the US and 34.3% of US interviewers reported they are very or moderately important. Thank you notes if done thoughtfully represent an opportunity to further sell the applicant to a program, shows active listening by mentioning impactful parts of the interview, to briefly expand on a conversation from the interview and to show a small sentiment of gratitude11. There are no formal data to show a failure to send a “thank you” note hurts the chances of obtaining a job but when asked, over 50% of applicants interviewing for radiation oncology residency worried it might6,12.

The strengths of the study include both quantitative and free response advice from a large world-wide cohort of senior investigators which is different from most of the published literature which is more limited in scope2-6,11,13,14. The population surveyed was exclusively providers involved in pediatric oncology. The survey was conducted in English and a majority of interviewers were from the US. This due to over 90% of COG members/mentors are from the US and the US is the most represented country in SIOP. No incentive for completion was offered, and the respondence rate was similar to other online surveys of health professionals15. There may be variation in responses if sent to providers from other specialties or enriched with those from other non-US countries. This is an area for future research.

## Conclusion: This study gives insight into how interviewers prepare for interviews, describes the priorities and qualities interviewer value, and have generated an extensive list of possible interview questions commonly used in academic interviews in pediatric oncology that is likely to be valuable to those conducting interviews and prospective candidates.

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## Legends

Supporting File 1: Copy of the academic advice survey

Supporting File 2: Open-ended question responses