



PS-OC Survey: Principal and Senior Scientific Investigators (Sections B & J)

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1. Please identify your primary affiliation with the Physical Sciences - Oncology Centers Program.

Please pick one of the answers below.

- Center Principal Investigator (PI)
- Center Senior Scientific Investigator (SI)
- PS-OC Project/Core Investigators (i.e. project/core leader or research investigator)
- PS-OC Trainee
- PS-OC Advocate
- PS-OC Outreach and Dissemination Unit Lead
- PS-OC Education and Training Unit Lead
- PS-OC Administrator
- PS-OC External Advisor
- I am not associated with the PS-OC Program

Section B. The following section contains questions specific for the Principal and Senior Investigators of the PS-OCs.

2. B1. There are a variety of different types of scientists involved in the PS-OC program. Research experiences may vary depending on your background and the background of your collaborators. For each of the following column headers, please select all types of scientists that apply.

Please fill in the answers in the table below (mark appropriate circles and squares and fill in the blank spaces).

| | Your field of training and expertise | Scientists have you worked with prior to the PS-OC program | Scientists you work with currently | Scientists would like to work with in future projects |
|---|--------------------------------------|--|------------------------------------|---|
| Molecular Biologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cell Biologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Engineers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Biologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Evolutionary Biologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Surgeons | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Oncologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Pathologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Radiologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cancer Biologists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Chemists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physicists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mathematicians | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Theorists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Statisticians | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Information Technologists/Computer Scientists | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions inquire about the planning, management, and organization of your PS-OC.

3. B2. Which one or more of the four NCI PS-OC Themes is most relevant to your PS-OC?

Please check all that apply.

- The Physics of Cancer
- Evolution and Evolutionary Theory in Cancer
- De-convoluting Complexity
- Understanding Information Transfer and Decoding

4. B3. What methods do you use to coordinate activities and facilitate communication across your PS-OC?

Please check all that apply and/or add your own variant.

- Face - to - Face Meetings
- Teleconferences
- PS-OC Site Visits
- PS-OC Workshops
- Email
- Webpage
- Phone Calls

Other

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5. B4. Please select the choice which most closely represents the frequency of meetings for the following questions.

Please mark the corresponding circle - only one per line.

| | Yearly | Every 6 months | Every 3 months | Monthly | Weekly | More than once per week | Daily |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|
| How often do you meet with your PS-OC's project leaders? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| How often do you meet with your entire PS-OC? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

6. B5. To what extent is your Center implementing the following activities recommended by NCI?

Please mark the corresponding circle - only one per line.

| | Not currently implementing | Attempting to implement | Neutral | Implementing some aspects | Fully implementing |
|---|----------------------------|-------------------------|-----------------------|---------------------------|-----------------------|
| Offering PS-OC research training programs | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Promoting multi-disciplinary collaborations within center | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Promoting multi-disciplinary collaborations between PS-OCs | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ensuring day to day management and communications within the PS-OC | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Emphasizing strategic planning within the PS-OC, including setting milestones, monitoring progress, seeking advisory or committee input | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

7. B6. What challenges have you encountered or do you anticipate for your PS-OC?

Please check all that apply and/or add your own variant.

- Communication barriers between disciplines
- Delay in formation of teams and collaborations
- Limited funds
- Lack of physical infrastructure support
- Difficulties sharing data and information

Other

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The following questions inquire about the progress of your PS-OC's research, training, and outreach programs.

8. B7. Please rate your satisfaction with the progress you have made so far relative to the milestones you set for your PS-OC, in the following categories.

Please mark the corresponding circle - only one per line.

| | A | B | C | D | E | F | G |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The overall PS-OC framework | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Research Projects | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Outreach and Dissemination | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Education and Training | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Legend for rank grid table: 8. B7. Please rate your satisfaction with the progress you have made so far relative to the milestones you set for your PS-OC, in the following categories.

Columns:

- A - Dissatisfied
- B -
- C -
- D - Neutral
- E -
- F -
- G - Satisfied

9. B8. Please rate the necessity of the following in achieving the research milestones of your PS-OC.

Please mark the corresponding circle - only one per line.

| | A | B | C | D | E | F | G |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Development of new paradigms | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Development of new datasets | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Development of new approaches, models, or techniques | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Formation of trans-disciplinary collaborations between physical scientists and cancer researchers | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Legend for rank grid table: 9. B8. Please rate the necessity of the following in achieving the research milestones of your PS-OC.

Columns:

- A - Unimportant
- B -
- C -
- D - Neutral
- E -
- F -
- G - Important

10. B9. What do you believe is a reasonable timeframe to expect PS-OC supported discoveries suitable for translation?

Please pick one of the answers below.

- 0-1 year
- 1-3 years
- 3-5 years
- 5-10 years
- 10+ years

Section J. The following questions inquire about your collaborations and their impact, methods for facilitating collaborations, and the impact of the PS-OC program in your collaborations.

11. J1. Without naming specific individuals, please give an example of a successful trans-disciplinary collaboration (i.e. a collaboration that integrated two or more individual disciplinary perspectives) in which you have been involved as part of the PS-OC program. Please provide a brief description of the project and how it was initiated. Please define each member's role in the collaboration.

Please write your answer in the space below.

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12. J1b. What are the outcomes of the collaboration described above? Please select all that apply.

Please check all that apply.

- New knowledge or skills
- Pilot project funds
- Outreach project funds
- Trans-network project funds
- NIH or NSF grant funds
- Publications
- Conference presentations or invited talks
- The collaboration is still in progress.
- Will form new collaborations
- Will pursue new aspects of the project as an extension of this work

13. J1c. How many researchers were involved in this trans-disciplinary collaboration?

Please pick one of the answers below.

- 2
- 3
- 4
- 5-7
- 8-10
- 10+

14. J1d. Please indicate how strongly you agree or disagree with each of the following statements pertaining to the collaboration described above. "I would have obtained these outcomes..."

Please mark the corresponding circle - only one per line.

| | Disagree | | | Neutral | | | Agree |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| without one member of the team | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| without two members of the team | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| without a trans-disciplinary collaboration | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| without the support of the PS-OC program | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

15. J2. What difficulties , if any, have you experienced during your trans-disciplinary collaborations in the PS-OC program? Please rate the severity of these difficulties on a scale of 1-5. A "1" indicates that the issue did not impact the outcome(s) of the collaboration. A "5" indicates that the issue severely impacted the collaboration.

Please fill in the answers in the table below (mark appropriate circles and squares and fill in the blank spaces).

| | Check all that apply | Please rate the severity of the issue |
|---|--------------------------|---|
| Members prioritized their personal goals before the overall team goal | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Difficulties in sharing data | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| The team members discuss issues only at a broad level | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Difficulties in sharing supplies, cells, tissue, or equipment | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Responsibilities, roles, and expectations were not clear | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Difficulties in organizing travel | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Team members became competitive with one another | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Difficulties in communication across scientific disciplines | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Lack of funds | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |

| | | |
|---|--------------------------|---|
| Power struggles | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Sharing credit | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| The team did not meet regularly | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| The team did not establish trust | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| There is no reward structure at my institution for collaborations | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Trouble identifying additional team members to help | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| Lack of clear vision or goals | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |
| No agreement on the primary spokesperson | <input type="checkbox"/> | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 |

16. J3. Please define your role(s) in your PS-OC collaborations. Please select all that apply.

Please check all that apply and/or add your own variant.

- Provide cells or reagents
- Provide technology or skill
- Provide strategic direction
- Leader
- Combine data
- Organize team meetings and communication
- Perform data analysis
- Participant
- Advisor
- Provide training/education
- Create reports
- Communicate to stakeholders (i.e. NCI)
- Interface with Institutional leadership
- Administrative support or IT

Other

17. J4. Please answer the following questions with the approximate number of investigators (i.e. faculty level researchers).

Please mark the corresponding circle - only one per line.

| | 0 | 1 - 4 | 5 - 10 | 11 -15 | 16+ |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| How many PS-OC investigators within your Center did you work with prior to the start of the PS-OC program? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| How many PS-OC investigators within your Center do you work with now? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| How many of these new collaborations would have started without PS-OC program funding? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

18. J5. Overall, please evaluate your PS-OC supported collaborations in the following areas.

Please mark the corresponding circle - only one per line.

| | Very Poor | Poor | Fair | Good | Excellent |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Scientific impact | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Productivity | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Rewarding to all parties involved equally | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication among collaborators | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ability to utilize the strengths of different researchers involved | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Enabling you to reach your own research milestones faster | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ability to attract new collaborators to join effort | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

19. J6. How effective have the following PS-OC opportunities been in encouraging you to find and/or generate collaborations?

Please mark the corresponding circle - only one per line.

| | Not Applicable | Ineffective | | Somewhat Effective | | Very Effective |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| PS-OC Trans-Network Projects | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Young Investigator Trans-Network Projects | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Pilot Projects | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Outreach Pilot Projects | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Student Exchanges | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Annual Meeting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Workshops and Symposiums | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PS-OC Data Jamboree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

20. J7. From your standpoint, please evaluate the extent to which the PS-OC program has been successful in the following areas.

Please mark the corresponding circle - only one per line.

| | I do not know | Very Poor | Poor | Fair | Good | Excellent |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Improving leadership skills in heading a trans-disciplinary study | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mentoring junior faculty in leading and participating in a trans-disciplinary study | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Increasing the discussion about team science and collaborations at your institution | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Developing better policies to review and reward team science at your institution | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

The following question inquires about your views on the progress the PS-OC program is making relative to the goals of the program.

21. From your standpoint, please evaluate the extent to which the PS-OC program has been successful in reaching the following program goals.

Please mark the corresponding circle - only one per line.

| | I do not know | Very Poor | Poor | Fair | Good | Excellent |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Form trans-disciplinary teams focused on establishing physical sciences-centric themes in cancer research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Build a collaborative trans-discipline research sharing network | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Promote collaboration by PS-OC researchers across the PS-OC network | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Educate trans-disciplinary scientists that pursue careers in the field of physical sciences in oncology | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Promote collaboration by PS-OC researchers beyond the PS-OC network | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Form new physical sciences in oncology programs at universities or institutions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Test dogma-challenging hypothesis on cancer initiation and progression | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Bring new types of scientists to cancer research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Generate new datasets in cancer research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Generate new knowledge in cancer research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

22. Please provide any additional comments that you would like to share about the convergence of physical sciences in oncology or the PS-OC program.

Please write your answer in the space below.

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