



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	☐	☐	☐	☐
Cell Biologists	☐	☐	☐	☐
Engineers	☐	☐	☐	☐
Biologists	☐	☐	☐	☐
Evolutionary Biologists	☐	☐	☐	☐
Surgeons	☐	☐	☐	☐
Oncologists	☐	☐	☐	☐
Pathologists	☐	☐	☐	☐
Radiologists	☐	☐	☐	☐
Cancer Biologists	☐	☐	☐	☐
Chemists	☐	☐	☐	☐
Physicists	☐	☐	☐	☐
Mathematicians	☐	☐	☐	☐
Theorists	☐	☐	☐	☐
Statisticians	☐	☐	☐	☐
Information Technologists/Computer Scientists	☐	☐	☐	☐
Other	☐	☐	☐	☐

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

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?	☐	☐	☐	☐	☐	☐	☐
How often do you meet with your entire PS-OC?	☐	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐
Promoting multi-disciplinary collaborations within center	☐	☐	☐	☐	☐
Promoting multi-disciplinary collaborations between PS- OCs	☐	☐	☐	☐	☐
Ensuring day to day management and communications within the PS-OC	☐	☐	☐	☐	☐
Emphasizing strategic planning within the PS-OC, including setting milestones, monitoring progress, seeking advisory or committee input	☐	☐	☐	☐	☐

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

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	☐	☐	☐	☐	☐	☐	☐
PS-OC Research Projects	☐	☐	☐	☐	☐	☐	☐
PS-OC Outreach and Dissemination	☐	☐	☐	☐	☐	☐	☐
PS-OC Education and Training	☐	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐	☐
Development of new datasets	☐	☐	☐	☐	☐	☐	☐
Development of new approaches, models, or techniques	☐	☐	☐	☐	☐	☐	☐
Formation of trans-disciplinary collaborations between physical scientists and cancer researchers	☐	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐	☐
without two members of the team	☐	☐	☐	☐	☐	☐	☐
without a trans-disciplinary collaboration	☐	☐	☐	☐	☐	☐	☐
without the support of the PS-OC program	☐	☐	☐	☐	☐	☐	☐

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	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Difficulties in sharing data	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
The team members discuss issues only at a broad level	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Difficulties in sharing supplies, cells, tissue, or equipment	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Responsibilities, roles, and expectations were not clear	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Difficulties in organizing travel	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Team members became competitive with one another	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Difficulties in communication across scientific disciplines	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Lack of funds	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Power struggles	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Sharing credit	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
The team did not meet regularly	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
The team did not establish trust	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
There is no reward structure at my institution for collaborations	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Trouble identifying additional team members to help	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Lack of clear vision or goals	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
No agreement on the primary spokesperson	☐	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 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?	☐	☐	☐	☐	☐
How many PS-OC investigators within your Center do you work with now?	☐	☐	☐	☐	☐
How many of these new collaborations would have started without PS-OC program funding?	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐
Productivity	☐	☐	☐	☐	☐
Rewarding to all parties involved equally	☐	☐	☐	☐	☐
Communication among collaborators	☐	☐	☐	☐	☐
Ability to utilize the strengths of different researchers involved	☐	☐	☐	☐	☐
Enabling you to reach your own research milestones faster	☐	☐	☐	☐	☐
Ability to attract new collaborators to join effort	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐
PS-OC Young Investigator Trans-Network Projects	☐	☐	☐	☐	☐	☐
PS-OC Pilot Projects	☐	☐	☐	☐	☐	☐
PS-OC Outreach Pilot Projects	☐	☐	☐	☐	☐	☐
Student Exchanges	☐	☐	☐	☐	☐	☐
PS-OC Annual Meeting	☐	☐	☐	☐	☐	☐
PS-OC Workshops and Symposia	☐	☐	☐	☐	☐	☐
PS-OC Data Jamboree	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐
Mentoring junior faculty in leading and participating in a trans-disciplinary study	☐	☐	☐	☐	☐	☐
Increasing the discussion about team science and collaborations at your institution	☐	☐	☐	☐	☐	☐
Developing better policies to review and reward team science at your institution	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐
Build a collaborative trans-discipline research sharing network	☐	☐	☐	☐	☐	☐
Promote collaboration by PS-OC researchers across the PS-OC network	☐	☐	☐	☐	☐	☐
Educate trans-disciplinary scientists that pursue careers in the field of physical sciences in oncology	☐	☐	☐	☐	☐	☐
Promote collaboration by PS-OC researchers beyond the PS-OC network	☐	☐	☐	☐	☐	☐
Form new physical sciences in oncology programs at universities or institutions	☐	☐	☐	☐	☐	☐
Test dogma-challenging hypothesis on cancer initiation and progression	☐	☐	☐	☐	☐	☐
Bring new types of scientists to cancer research	☐	☐	☐	☐	☐	☐
Generate new datasets in cancer research	☐	☐	☐	☐	☐	☐
Generate new knowledge in cancer research	☐	☐	☐	☐	☐	☐

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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