

Gynecologic Cancers Portfolio Analysis

Summary of the burden of gynecologic cancers in the United States and
investments in research by the National Cancer Institute and members of
the International Cancer Research Partnership

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OVERVIEW

Gynecologic cancers—including cancers of the cervix, uterus, ovary, vagina, and vulva—affect nearly 90,000 women in the United States each year, collectively accounting for 11 percent of cancer cases among U.S. women. The burden of gynecologic cancers is even greater in some areas of the world that lack adequate cancer control resources and infrastructure. Although all affect the female reproductive tract, each of the gynecologic cancers present different challenges related to prevention, detection, diagnosis, and treatment, necessitating focused research on each of these disease types. This report presents the burden of gynecologic cancers in the United States and summarizes the research portfolios of the National Cancer Institute (NCI) and the International Cancer Research Partnership (ICRP) related to each of the gynecologic cancers. Overall trends in funding and numbers of projects are included, as is an analysis of the scientific focus of the NCI and ICRP portfolios.

BACKGROUND

OVERVIEW OF GYNECOLOGIC CANCER BURDEN

Gynecologic cancers are cancers that begin in the female reproductive organs, including the cervix, uterus, ovaries, vagina, and vulva. It is estimated that 88,750 women in the United States will be diagnosed with a gynecologic cancer in 2012 and 29,520 will die from one of these cancers (Figure 1).¹ In the United States, the most commonly diagnosed gynecologic cancer is uterine cancer, with an incidence rate of 26.5 per 100,000 women in 2009 (Figure 2). However, ovarian cancer, with a mortality rate of 7.8 per 100,000 women in 2009, claims the lives of more American women than do the other gynecologic cancers combined (Figure 3).²

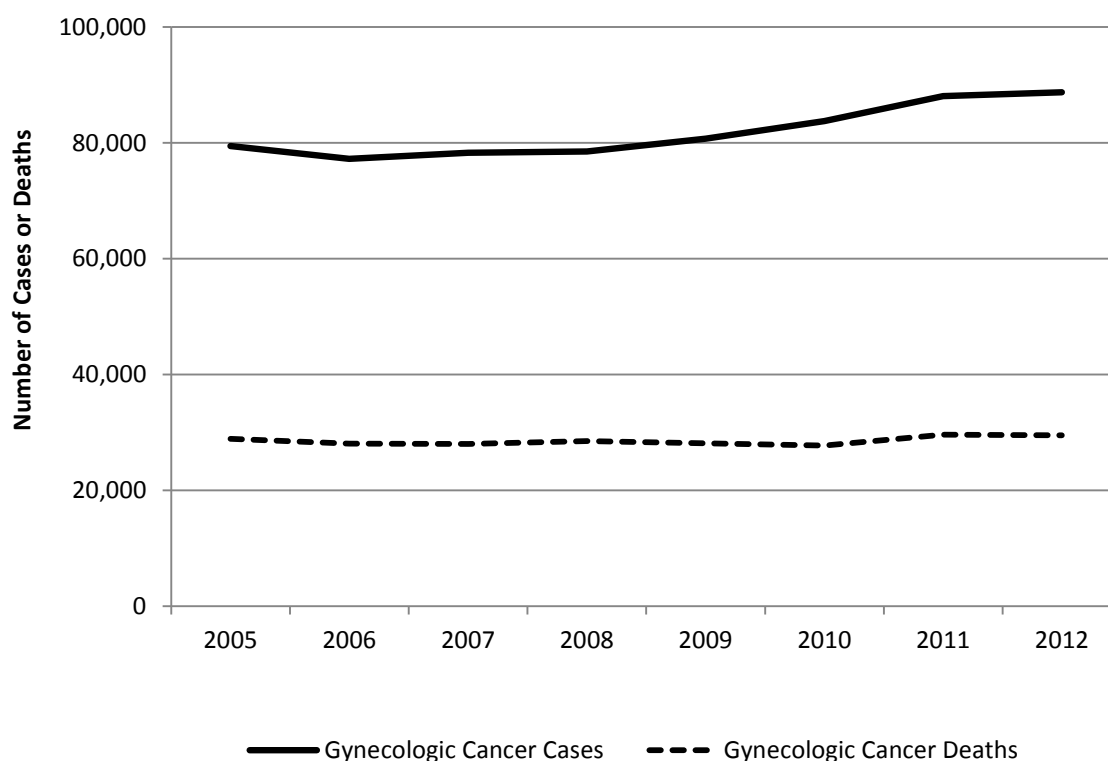


Figure 1. Estimated New Cases and Deaths for Gynecologic Cancers, 2005-2012

Overall incidence and mortality rates for gynecologic cancers declined between 1992 and 2009, but progress has been uneven among the cancer types (Figure 2 and Figure 3). Improvements have been most notable for cervical cancer. Ovarian cancer incidence and mortality rates also declined modestly over this time period, but survival rates for this disease remain the lowest of those for gynecologic cancers; more than half of women diagnosed with ovarian cancer will die within five years (Figure 4).² Five-year survival rates for vaginal cancer are similarly low, while more than two-thirds of women with cervical, endometrial, or vulvar cancer live at least nine years after being diagnosed.

¹ American Cancer Society. Cancer facts & figures 2012. Atlanta (GA): ACS; 2012. Available from: <http://www.cancer.org/Research/CancerFactsFigures/CancerFactsFigures/index>

² National Cancer Institute. Surveillance, Epidemiology and End Results (SEER). Bethesda (MD): NCI; 2012. Available from: <http://seer.cancer.gov/>

Gynecologic Cancers Portfolio Analysis

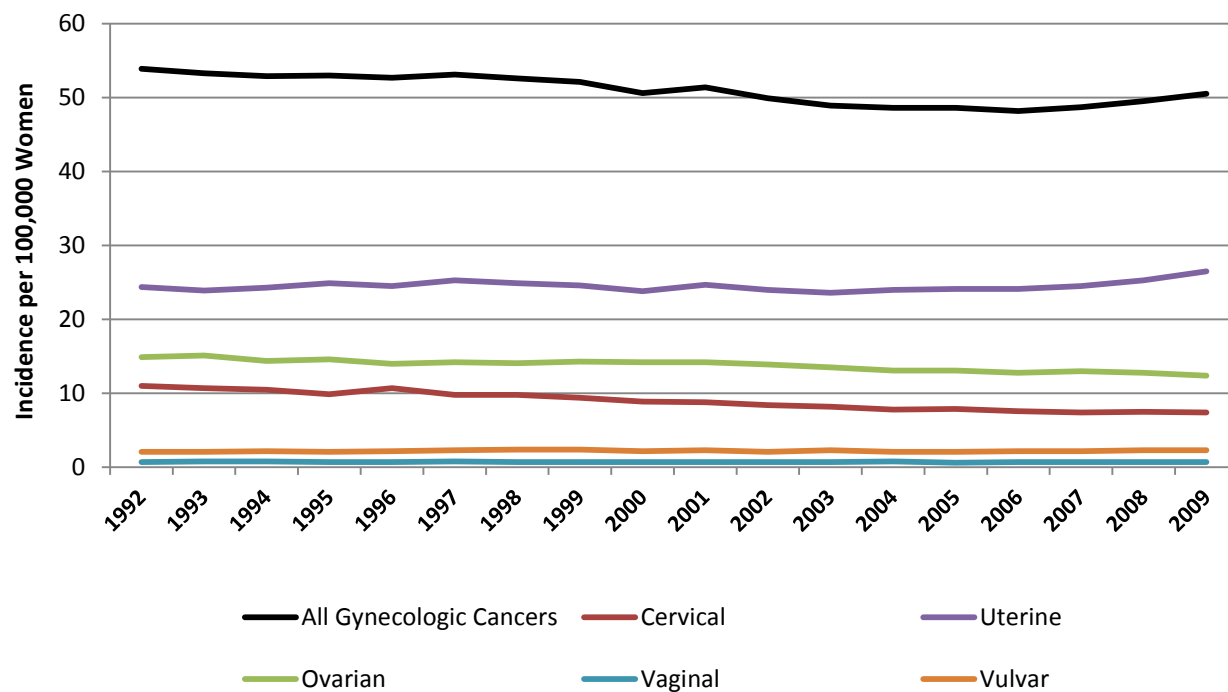


Figure 2. Age-Adjusted Incidence Rates for Gynecologic Cancers, 1992-2009

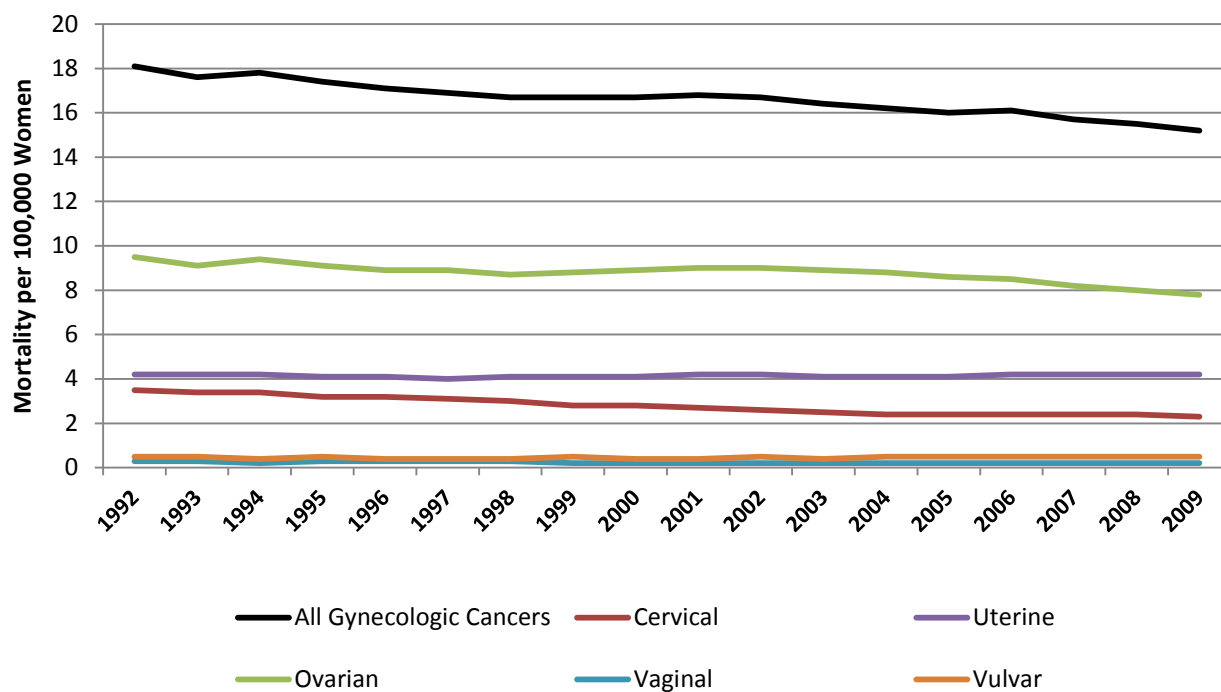


Figure 3. Age-Adjusted Mortality Rates for Gynecologic Cancers, 1992-2009

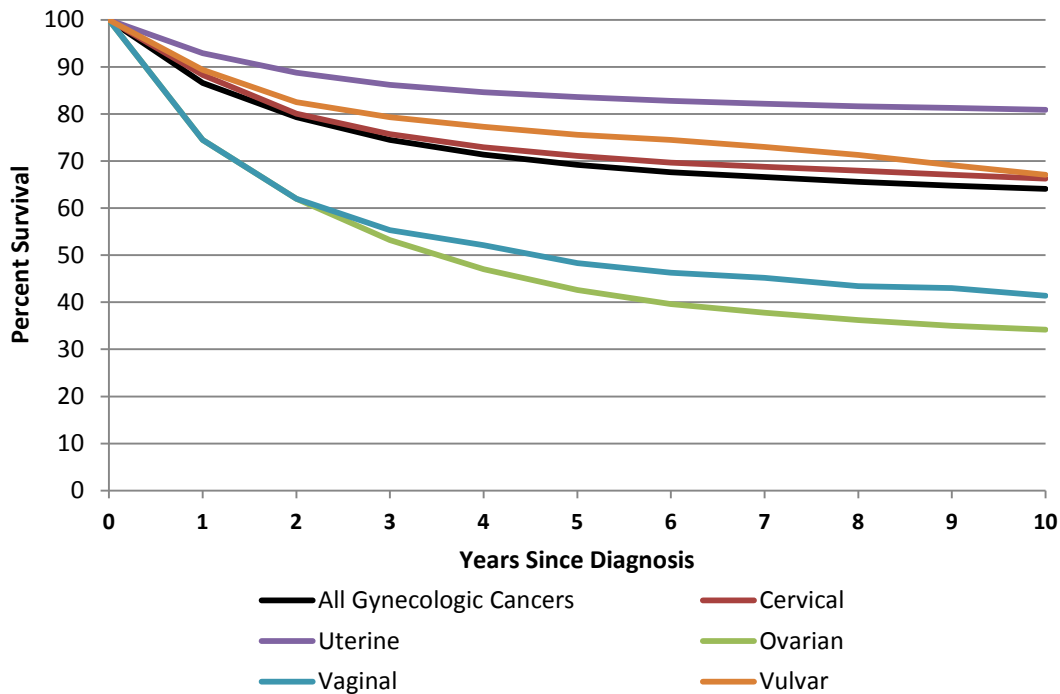


Figure 4. Relative Survival Rates for Gynecologic Cancers, 1988-2008

CERVICAL CANCER

Cervical cancer incidence and mortality rates have declined over the past several decades in the United States, in large part because of widespread use of Pap screening to detect precancerous lesions. Although the cervical cancer burden has decreased across all racial/ethnic groups in the United States, disparities in both incidence and mortality persist (Figure 5 and Figure 6).³ Rates of cervical cancer are highest among Hispanic women, who are less likely than white or black women to undergo Pap screening.⁴ However, despite the fact that black women have exhibited the largest reduction in cervical cancer mortality since 1992, they continue to be more than twice as likely as their white counterparts to die from the disease.

Virtually all cervical cancers are caused by infection with oncogenic forms of the human papillomavirus (HPV). Most adults have been infected with HPV at some point in their lives, but most of these infections are cleared by the immune system and do not lead to cancer. Some factors—including having a weakened immune system, smoking, having many children, and long-term oral contraceptive use—may increase the risk of developing cervical cancer following HPV infection.^{5,6} In the United States, two vaccines—Gardasil® and Cervarix®—have been approved by the U.S. Food and Drug Administration (FDA) for prevention of HPV infection. It has been estimated that widespread adoption of these vaccines could prevent up to 70 percent of cervical cancer cases worldwide.⁷

³ There were insufficient data to determine cervical cancer incidence rates for American Indians/Alaska Natives.

⁴ Centers for Disease Control and Prevention. Cervical cancer screening rates [Internet]. Atlanta (GA): CDC; 2011 [updated 2011 May 19; cited 2012 Sep 7]. Available from: <http://www.cdc.gov/cancer/cervical/statistics/screening.htm>

⁵ National Cancer Institute. What you need to know about cervical cancer. Bethesda (MD): NCI; 2012. Available from: <http://www.cancer.gov/cancertopics/wyntk/cervix>

⁶ National Cancer Institute. Fact sheet: HPV and cancer [Internet]. Bethesda (MD): NCI; 2012 [cited 2012 Sep 7]. Available from: <http://www.cancer.gov/cancertopics/factsheet/Risk/HPV>

⁷ Schiffman MA, Wacholder S. Success of HPV vaccination is now a matter of coverage. *Lancet Oncol*. 2012;13(1):10-2.

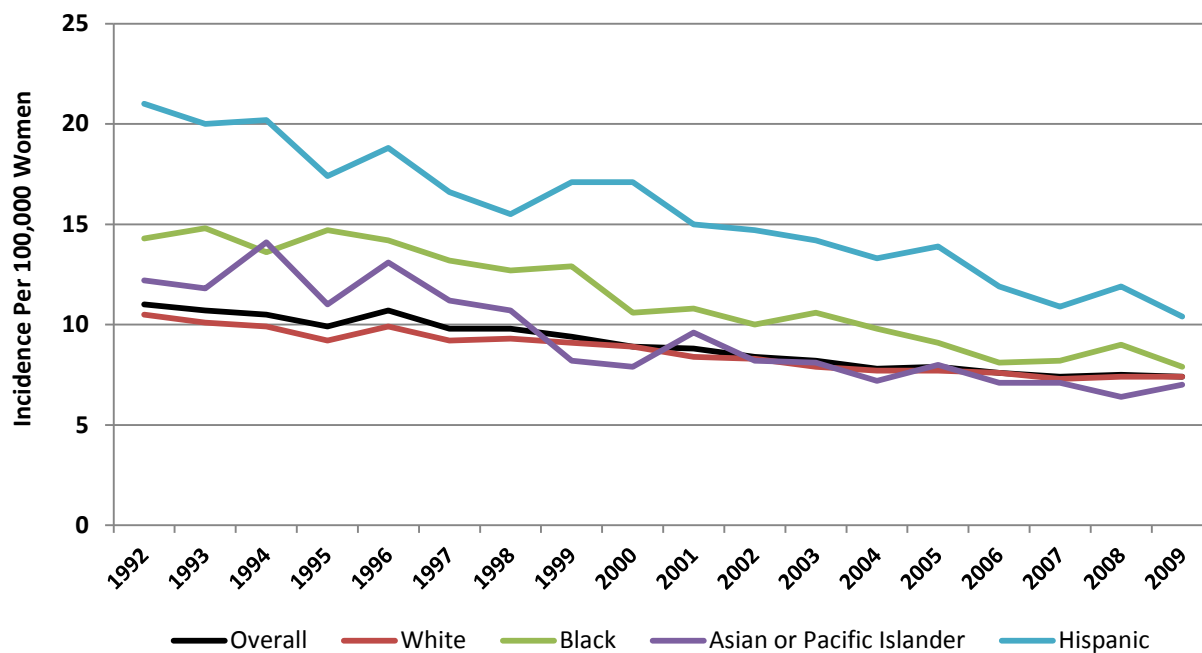


Figure 5. Age-Adjusted Incidence Rates for Cervical Cancer by Race/Ethnicity, 1992-2009

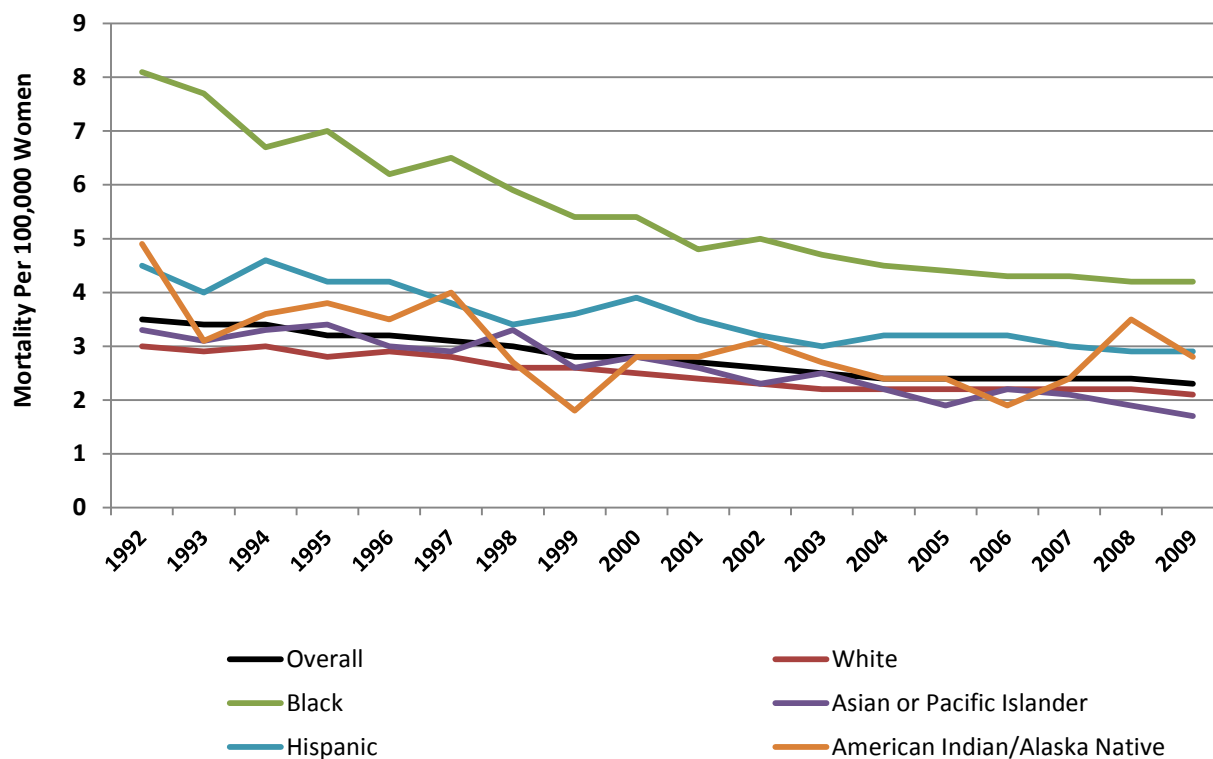


Figure 6. Age-Adjusted Mortality Rates for Cervical Cancer by Race/Ethnicity, 1992-2009

UTERINE CANCER

Uterine cancer is the most common gynecologic malignancy and accounts for approximately 6 percent of cancer cases among U.S. women.¹ Cancer of the endometrium (the inner lining of the uterus) is the most common type of uterine cancer. A small percentage (<10%) of tumors arising in the uterus begin in the muscle layer or connective tissues of the uterus; these tumors are referred to as uterine sarcomas. Incidence of uterine cancer remained relatively stable among whites between 1992 and 2009 (Figure 7). Although white women continued to have the highest incidence rate of uterine cancer in 2009, the gap between white and minority women closed substantially between 1992 and 2009 due to increased incidence among blacks, Asians/Pacific Islanders, and Hispanics. These increases correspond with a slight increase in overall incidence of uterine cancer over this time period, which is most evident between 2006 and 2009. Black women exhibit the highest mortality rate due to uterine cancer and are nearly twice as likely to die from the disease as are women from other racial/ethnic groups (Figure 8).⁸

Hormonal factors play a significant role in risk for endometrial cancer, with exposure to estrogen generally increasing risk and exposure to progesterone having a protective effect. A longer time period between menarche (first menstrual period) and menopause increases risk for endometrial cancer, as does use of estrogen therapy to treat the symptoms of menopause (the addition of progesterone negates the increased risk of uterine cancer but can have other negative effects). On the other hand, use of birth control pills and pregnancy decrease risk for endometrial cancer. It also is known that women with abnormal overgrowth of the endometrium (endometrial hyperplasia) are at increased risk for uterine cancer. In some cases, doctors may recommend that women with endometrial hyperplasia undergo hysterectomy (removal of the uterus) or treatment with progesterone to reduce their risk for endometrial cancer.^{9, 10}

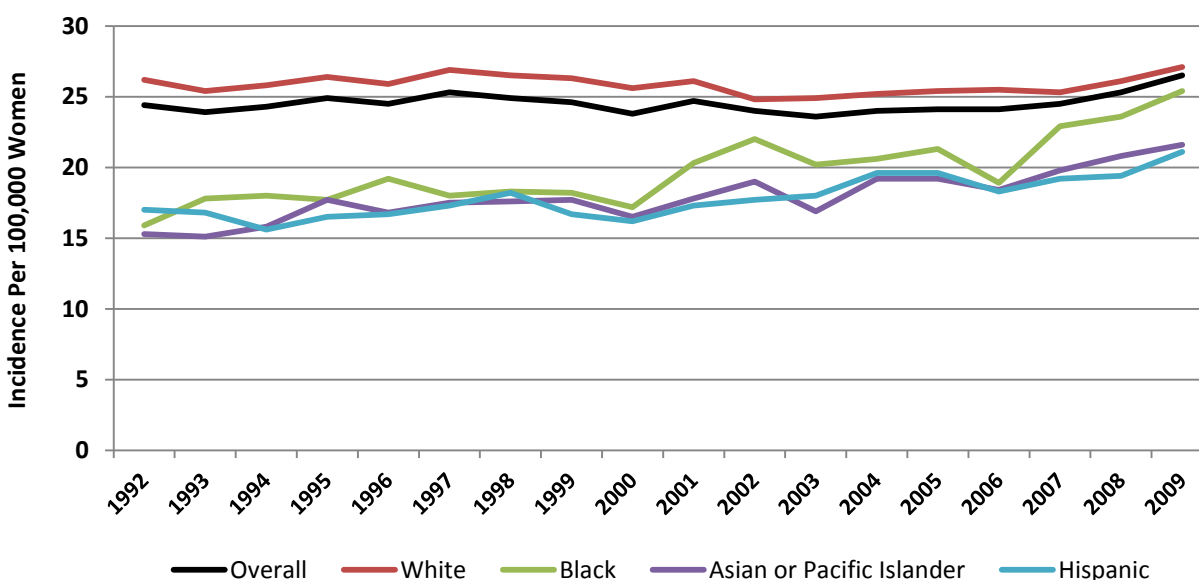


Figure 7. Age-Adjusted Incidence Rates for Uterine Cancer by Race/Ethnicity, 1992-2009

⁸ There were insufficient data to determine uterine cancer incidence and mortality rates for American Indians/Alaska Natives.

⁹ American Cancer Society. Endometrial cancer [Internet]. Atlanta (GA): ACS; 2012 [last updated 2012 Jul 25; cited 2012 Sep 7]. Available from: <http://www.cancer.org/Cancer/EndometrialCancer/index>

¹⁰ National Cancer Institute. What you need to know about cancer of the uterus. Bethesda (MD): NCI; 2010. Available from: <http://www.cancer.gov/cancertopics/wyntk/uterus>

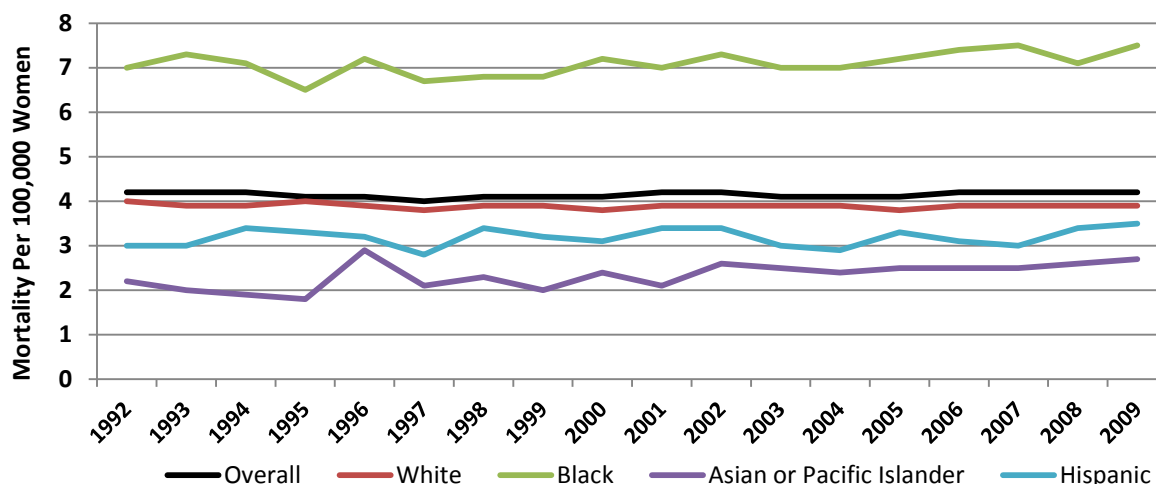


Figure 8. Age-Adjusted Mortality Rates for Uterine Cancer by Race/Ethnicity, 1992-2009

OVARIAN CANCER

Among U.S. women, ovarian cancer accounts for approximately 3 percent of cancer cases and is the fifth leading cause of cancer-related death.¹¹ Ovarian cancer incidence and mortality rates declined between 1992 and 2009 (Figure 9), but this disease remains the deadliest of the gynecologic cancers (Figure 3).¹¹ White women are more likely than women from other racial/ethnic groups to be diagnosed with and die from ovarian cancer (Figure 10). The high mortality rate for ovarian cancer is in part because of the lack of early symptoms and effective screening tests. As a result, more than 60 percent of women have distant metastases at the time of diagnosis, which is associated with a 27 percent five-year survival rate. In contrast, more than 90 percent of women diagnosed with localized disease live at least five years.¹²

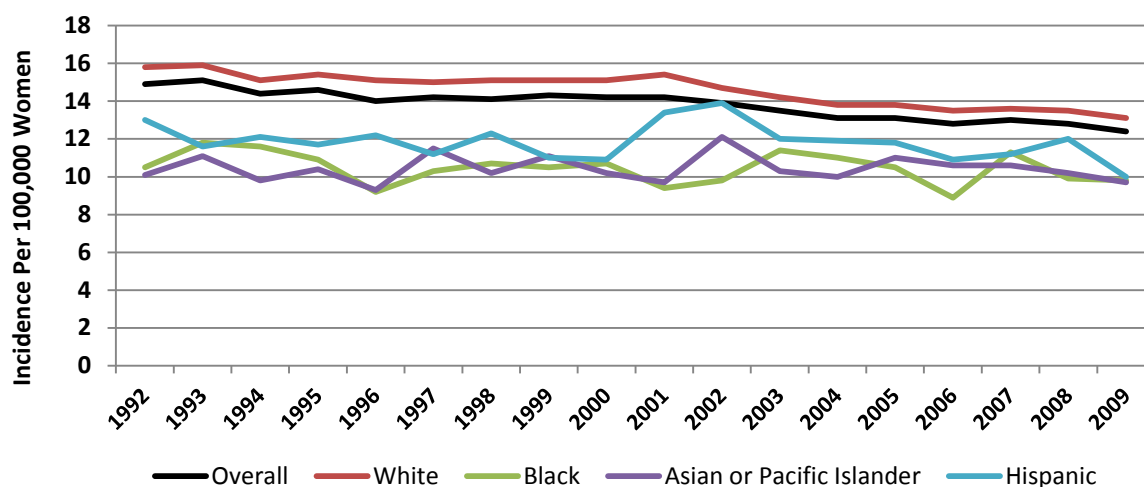


Figure 9. Age-Adjusted Incidence Rates for Ovarian Cancer by Race/Ethnicity, 1992-2009

¹¹ There were insufficient data to determine ovarian cancer incidence rates for American Indians/Alaska Natives.

¹² SEER CSR 1975-2009 (Vintage 2009 Populations), Table 21.8: Cancer of the ovary (invasive): 5-year relative and period survival (percent) by race, diagnosis year, stage and age. 2012 Apr [updated 2012 Apr]. Available from: http://seer.cancer.gov/csr/1975_2009_pops09/browse_csr.php?section=21&page=sect_21_table.08.html

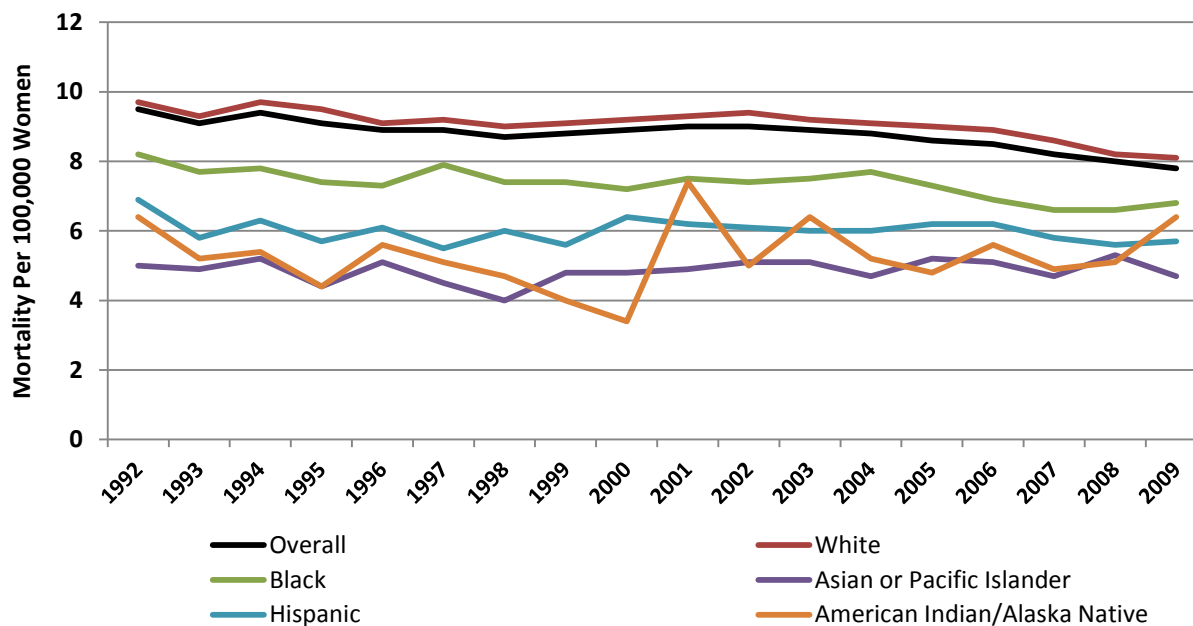


Figure 10. Age-Adjusted Mortality Rates for Ovarian Cancer by Race/Ethnicity, 1992-2009

VAGINAL CANCER

Vaginal cancer is the least common of the gynecologic cancers; fewer than 1 in 100,000 U.S. women are diagnosed with (Figure 11) or die from (Figure 12) the disease each year.¹³ However, survival rates are relatively low, with less than half of women living more than five years after diagnosis (Figure 4). Many vaginal cancers are caused by infection with HPV. Women whose mothers were treated with diethylstilbestrol (DES) during pregnancy also are at increased risk for vaginal cancer.¹⁴

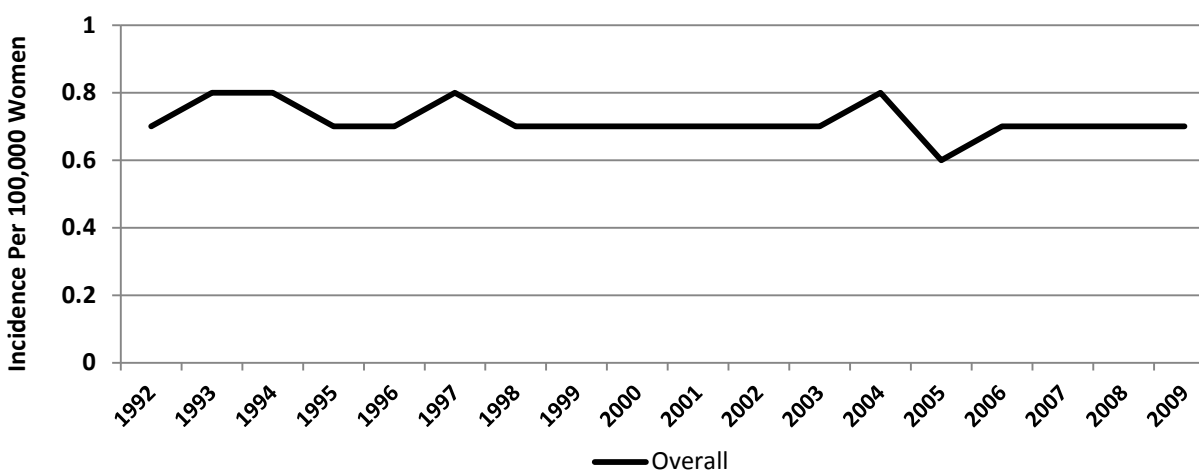


Figure 11. Age-Adjusted Incidence Rates for Vaginal Cancer, 1992-2009

¹³ There were insufficient data to assess vaginal cancer incidence rates by racial/ethnic groups and to determine vaginal cancer mortality rates for Asians/Pacific Islanders, Hispanics, and American Indians/Alaska Natives.

¹⁴ National Cancer Institute. Vaginal cancer treatment (PDQ). Bethesda (MD): NCI; 2012 [updated 2012 Aug 31; cited 2012 Sep 7]. Available from: <http://www.cancer.gov/cancertopics/pdq/treatment/vaginal/HealthProfessional/page1>

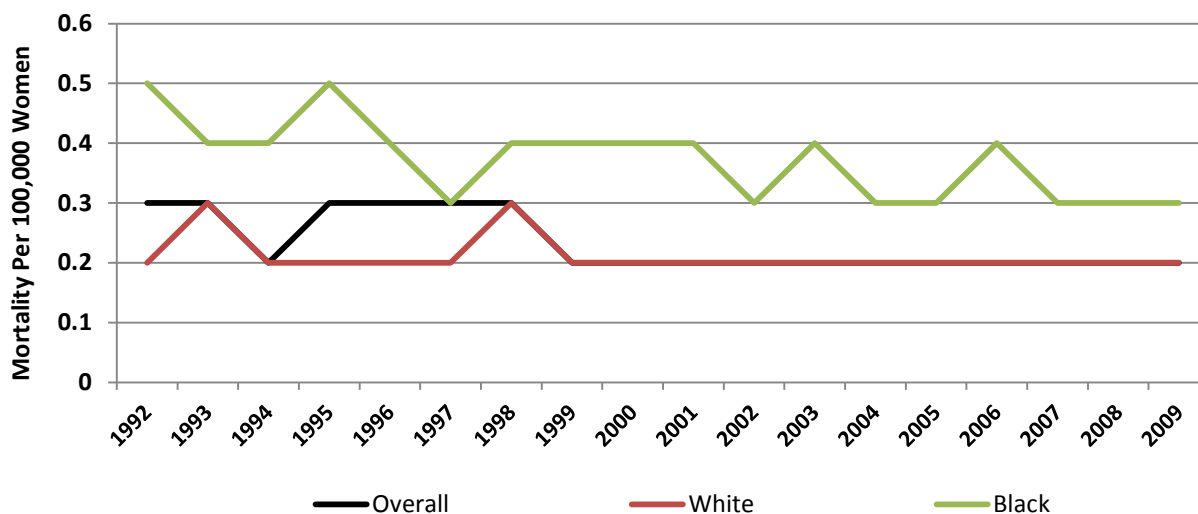


Figure 12. Age-Adjusted Mortality Rates for Vaginal Cancer by Race/Ethnicity, 1992-2009

VULVAR CANCER

Cancer of the vulva is relatively rare, with just over 2 in 100,000 U.S. women being diagnosed each year (Figure 13) and 1 in 200,000 dying from the disease (Figure 14).¹⁵ Among women diagnosed with vulvar cancer, 3 of 4 will survive at least five years, and the survival rate for women with localized disease is more than 90 percent. Like cancers of the cervix and vagina, vulvar cancers are linked to HPV infection, with about half of vulvar cancers thought to be caused by the virus.¹⁶

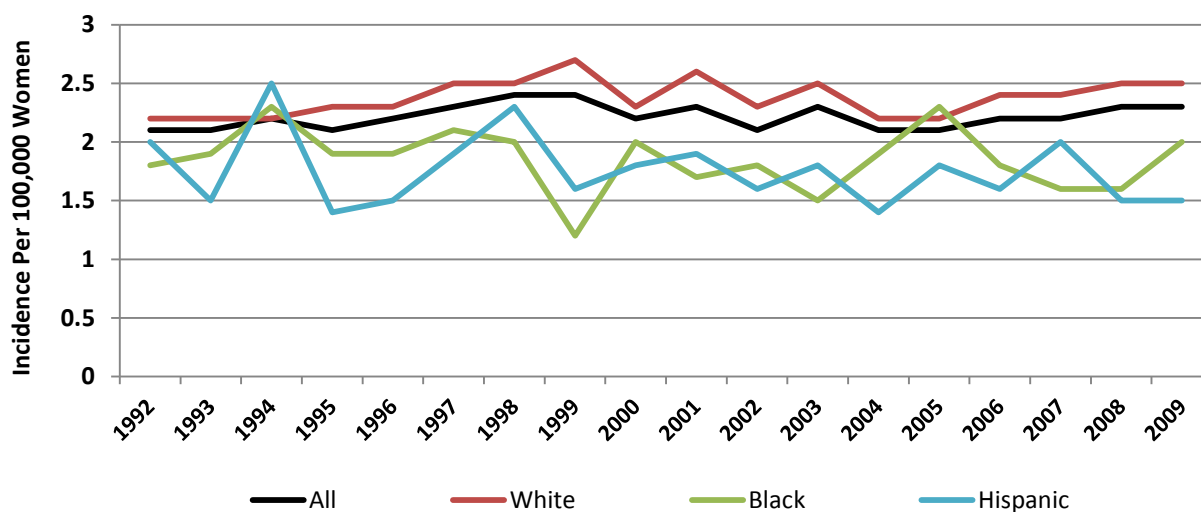


Figure 13. Age-Adjusted Incidence Rates for Vulvar Cancer by Race/Ethnicity, 1992-2009

¹⁵ There were insufficient data to determine vulvar cancer incidence and mortality rates for Asians/Pacific Islanders and American Indians/Alaska Natives.

¹⁶ American Cancer Society. Vulvar cancer [Internet]. Atlanta (GA): CDC; 2012 [updated 2012 Mar 3; cited 2012 Sep 7]. Available from: <http://www.cancer.org/Cancer/VulvarCancer/index>

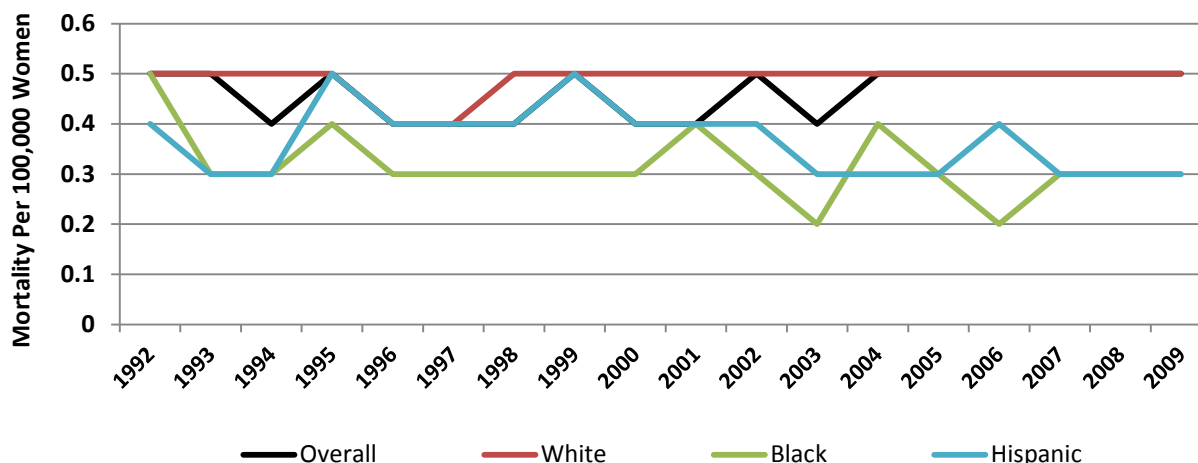


Figure 14. Age-Adjusted Mortality Rates for Vulvar Cancer by Race/Ethnicity, 1992-2009

RESEARCH ON GYNECOLOGIC CANCERS

Researchers around the world are working to better understand gynecologic cancers in order to enhance our ability to prevent, detect, and treat them. This section provides an overview of investments in gynecologic cancer research by NCI and members of the ICRP and characterizes the scientific focus of these research projects.

OVERALL TRENDS

NATIONAL CANCER INSTITUTE

NCI supports research on gynecologic cancers through a variety of mechanisms. The Research Projects section summarizes projects funded through traditional grant mechanisms and those being carried out in intramural laboratories, as well as some research contracts. Some investigator-initiated clinical trials are included in this section. The Clinical Trials section includes clinical trials supported through the Cooperative Groups program as well as those being conducted in the Clinical Center of the National Institutes of Health.

RESEARCH PROJECTS

In fiscal year (FY) 2011, NCI invested \$110.8 million in ovarian cancer research, \$81.4 million in cervical cancer research, \$15.9 million in uterine cancer research, and \$810,000 in vaginal cancer research (Figure 15).¹⁷ In FY2009 and FY2010, additional funding for ovarian, cervical, and uterine cancers was made available through the American Recovery and Reinvestment Act of 2009 (ARRA). In FY2011, NCI funded 464 projects relevant to at least one type of gynecologic cancer (Figure 16).¹⁸ The highest numbers of grants are studying ovarian cancer (270) and cervical cancer (175), with fewer grants focused on uterine cancer (41) and vaginal cancer (2).

¹⁷ NCI does not code for vulvar cancer. Vulvar cancer research likely is included under one of the other gynecologic cancers.

¹⁸ Limited to projects at least 25% relevant to specific gynecologic cancer site ("any gynecologic cancer" includes any projects at least 25% relevant to at least one gynecologic cancer). See Appendix A: Methods for more details on how percent relevance values are determined.

Gynecologic Cancers Portfolio Analysis

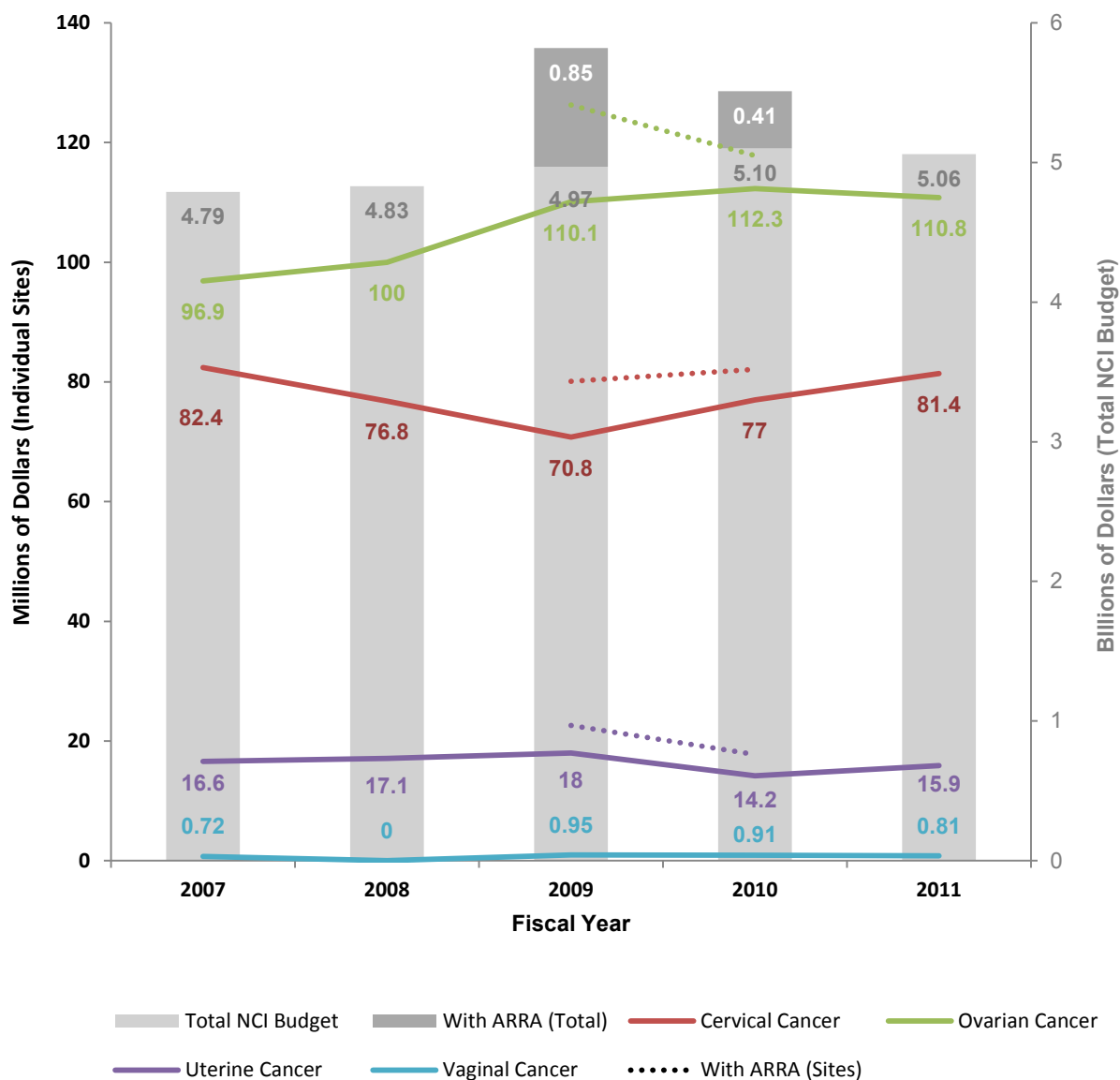


Figure 15. NCI Funding for Research on Gynecologic Cancers, FY2007-FY2011

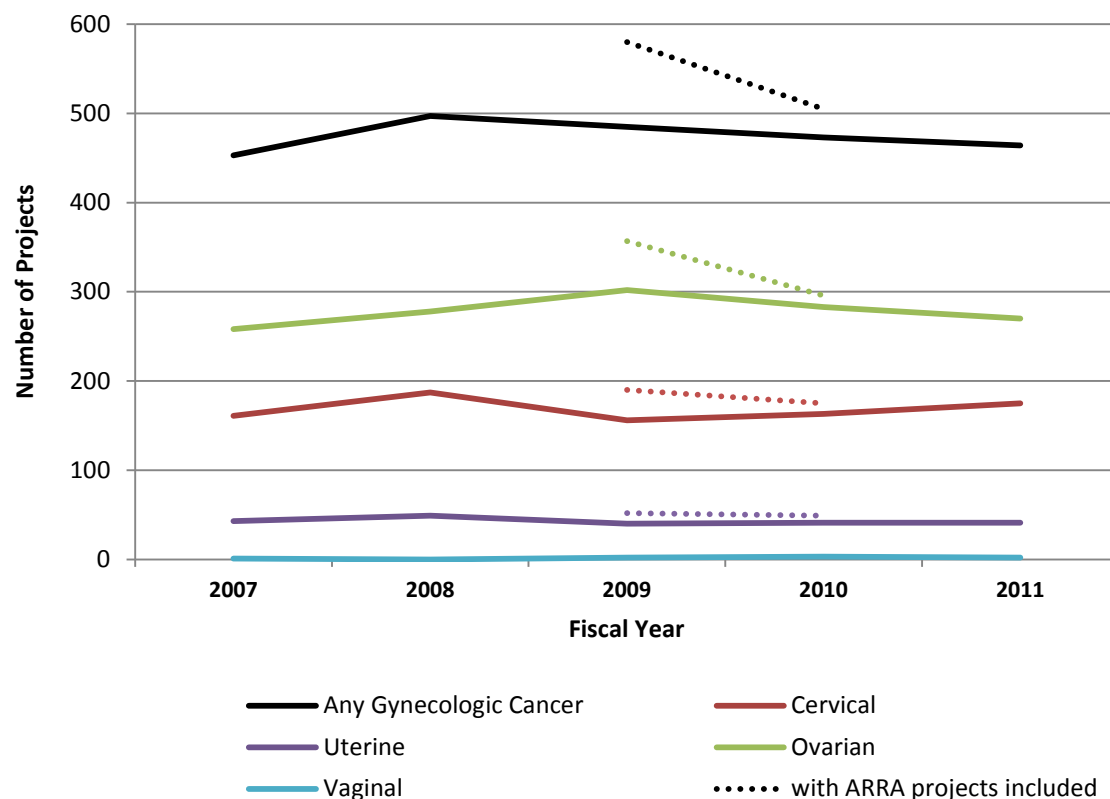


Figure 16. Number of NCI-Funded Projects Relevant to Gynecologic Cancers, FY2007-FY2011

CLINICAL TRIALS

In July 2012, NCI was supporting 156 trials relevant to at least one gynecologic cancer. Of these, 26 were phase I, 46 were phase I/II or phase II, and 19 were phase II/III or phase III (Figure 17). The remaining 65 had no phase specified. Figure 18 shows the distribution of these trials by cancer site. Almost half of the trials were relevant to ovarian cancer, with a relatively large number of trials looking at cervical or uterine cancer. Figure 19 shows the distribution of trials by focus.¹⁹ The largest number of trials focused on treatment, with a large number of trials also related to biomarkers or laboratory analysis. Nearly half of the trials with no phase specified included a biomarker component and many others focused on natural history or epidemiology; relatively few (9 of 65) were looking at treatments for gynecologic cancers. In contrast, the vast majority of the phase I-III trials (76 of 91) included a focus on treatment.

¹⁹ Areas of focus are not mutually exclusive. A single trial may focus on more than one area.

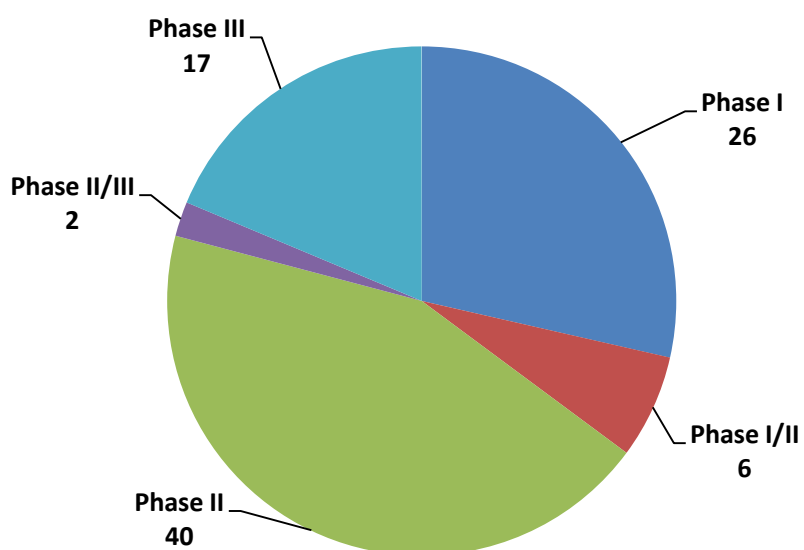


Figure 17. NCI-Sponsored Clinical Trials Related to Any Gynecologic Cancer by Phase

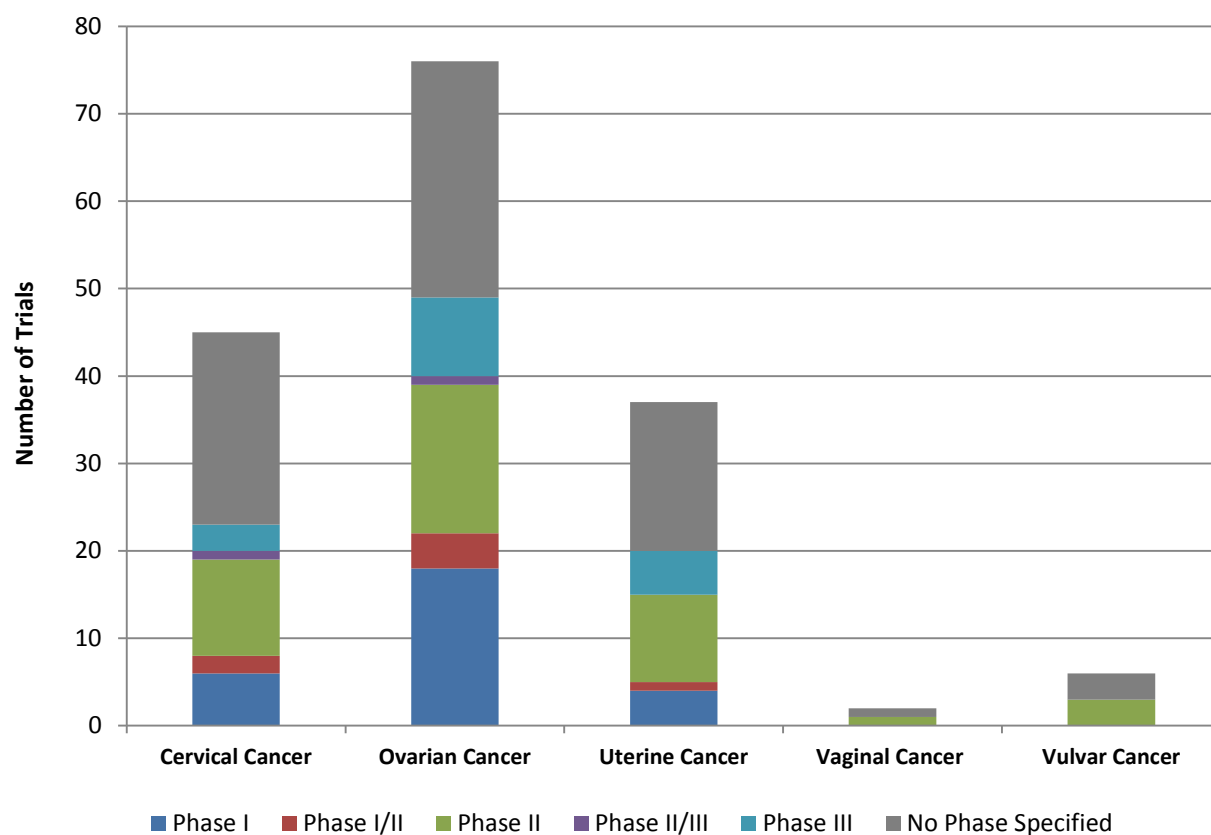


Figure 18. NCI-Sponsored Clinical Trials Related to Gynecologic Cancers by Site and Phase

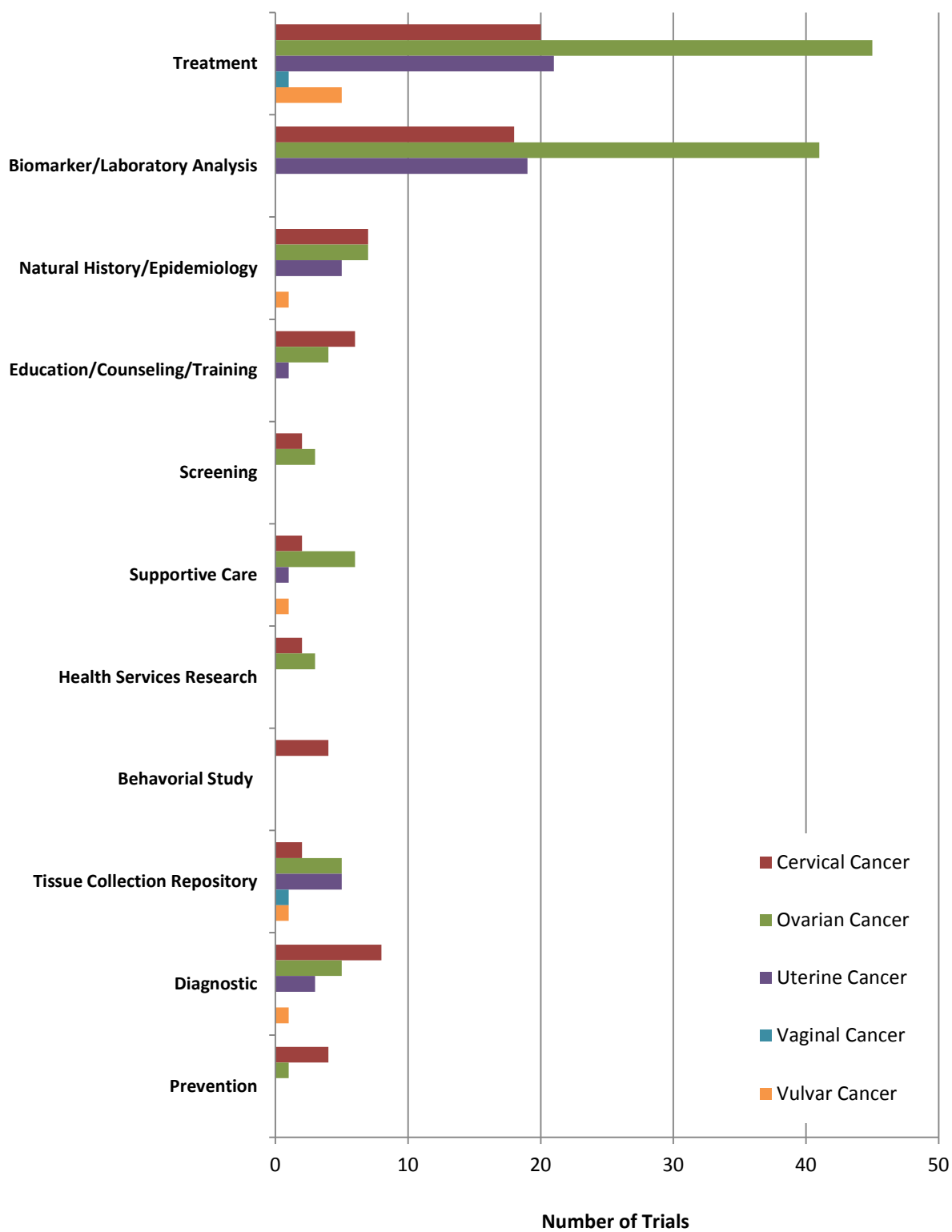


Figure 19. NCI-Sponsored Clinical Trials Related to Gynecologic Cancers by Focus and Site

INTERNATIONAL CANCER RESEARCH PARTNERSHIP

ICRP is a group of cancer organizations from the United States, Canada, France, the Netherlands, and the United Kingdom that formed an alliance in order to enhance global collaboration and strategic coordination of research. ICRP members conducting research on gynecologic cancers include the American Cancer Society (ACS), the Canadian Cancer Research Alliance (CCRA), the U.S. Department of Defense Congressionally Directed Medical Research Program (CDMRP), Institute du Cancer/DGOS Ministere de la Sante (INCa/DGOS), the Dutch Cancer Society (KWF), the National Cancer Research Institute (NCRI), and NCI.²⁰ For the purpose of this report, NCI data are not included as part of the ICRP portfolio. ICRP members collectively invested \$15.3 million in cervical cancer research, \$39.3 million in ovarian cancer research, \$7.8 million in endometrial cancer research, just over \$300,000 in vaginal cancer research, and nearly \$983,000 in vulvar cancer research (Figure 20).²¹ In total, ICRP partners funded 544 projects at least 25 percent relevant to at least one gynecologic cancer (Figure 21). The largest number of projects related to ovarian cancer (343), with fewer focused on cervical cancer (159), endometrial cancer (64), and vulvar cancer (8).²²

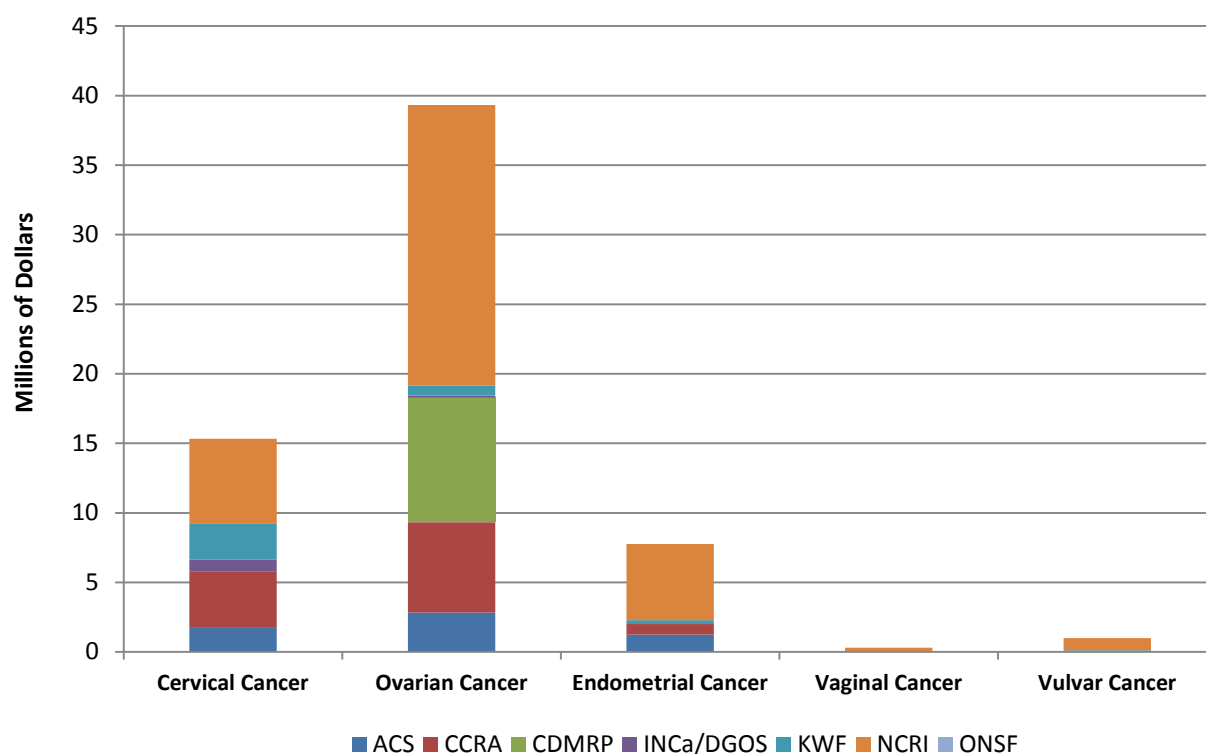


Figure 20. Funding for Gynecologic Cancers by ICRP Partners, Most Recent CY

²⁰ CCRA and NCRI are composed of groups of organizations from Canada and the United Kingdom, respectively, that submit data to ICRP collectively. CCRA and NCRI members are included in Appendix B: ICRP Organizations Supporting Research on Gynecologic Cancers.

²¹ ICRP partners submit portfolio data on a rolling basis. To account for differences in time periods of available data, data from the most recent calendar year (CY) for which complete data were available were used for each organization to approximate the portfolio for a given year. A listing of the most recent calendar year for each organization is included in Appendix B.

²² There were no ICRP-funded projects at least 25% relevant to vaginal cancer site during the time period of this analysis. There were a small of projects that were less than 25% relevant to vaginal cancer; the proportion of funding relevant to vaginal cancer is included in Figure 20.

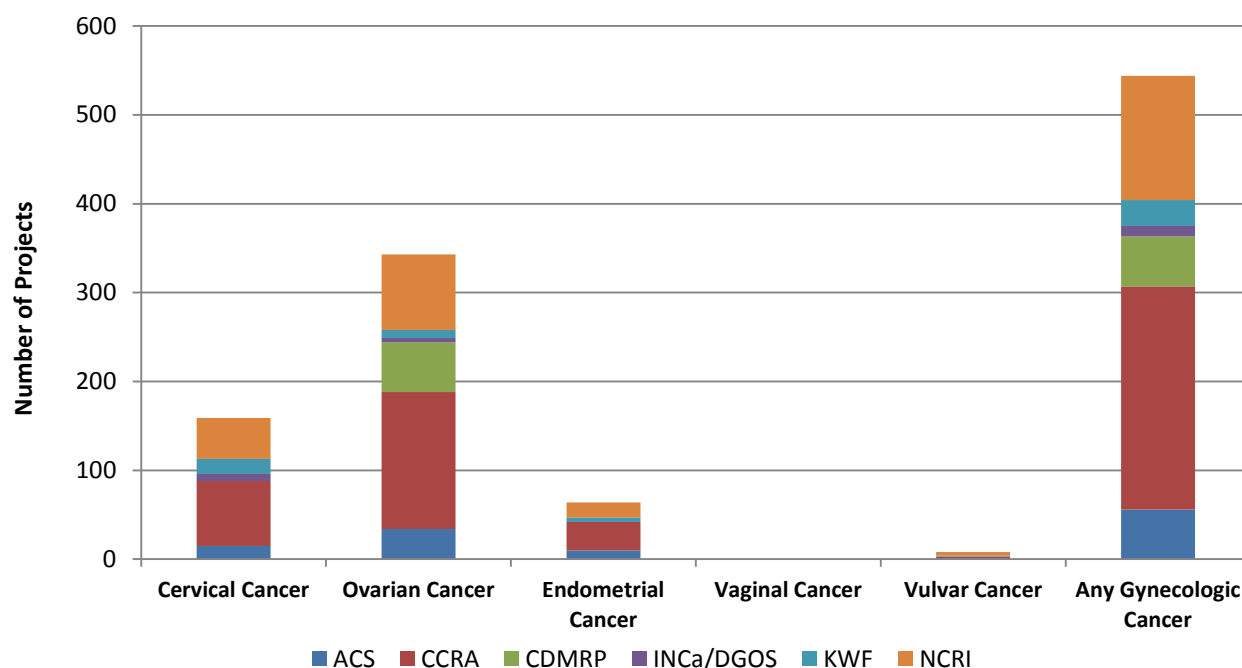


Figure 21. Number of Gynecologic Cancer Projects Sponsored by ICRP Partners, Most Recent CY

SCIENTIFIC FOCUS OF GYNECOLOGIC CANCER RESEARCH

OVERVIEW

Researchers are using an array of approaches to improve understanding of the complex set of diseases that comprise cancer and improve outcomes for patients diagnosed with them. Figure 22 and Figure 23 illustrate the scientific focus of the gynecologic cancer portfolios of NCI and ICRP members, respectively. The portfolios are presented using the Common Scientific Outline (CSO), a classification system organized into seven broad areas of scientific interest in cancer research: biology; etiology; prevention; early detection, diagnosis, and prognosis; treatment; cancer control, survivorship, and outcomes; and scientific model systems. Overall, the portfolios have a similar distribution across the CSO areas, with heavy emphases on biology; etiology; early detection, diagnosis, and prognosis; and treatment. The distribution of the portfolios related to each of the gynecologic cancer sites are shown in Figure 24 through Figure 31.

Each of the seven CSO categories areas includes a set of subcategories that allow more refined characterization of the research (see Appendix C: Common Scientific Outline). Figure 32 through Figure 45 provide a detailed assessment of the portfolios for each of the gynecologic cancer sites using these subcategories.

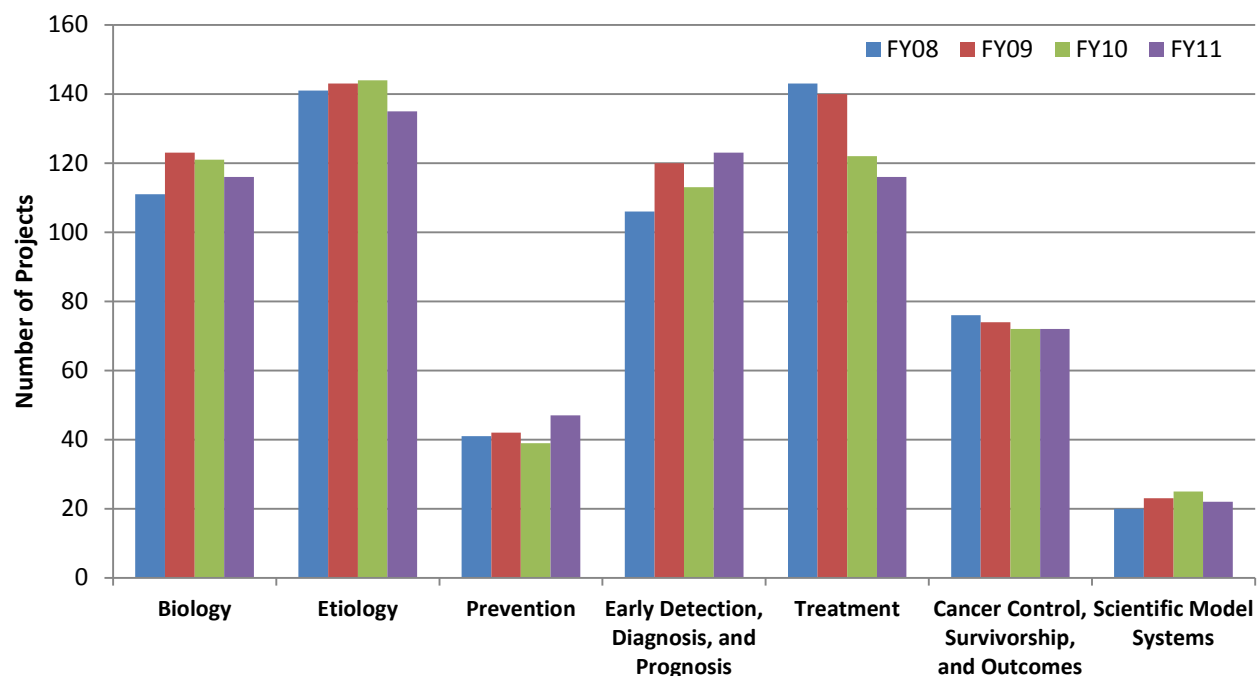


Figure 22. NCI-Funded Research Related to Any Gynecologic Cancer by Scientific Area, FY2008-FY2011

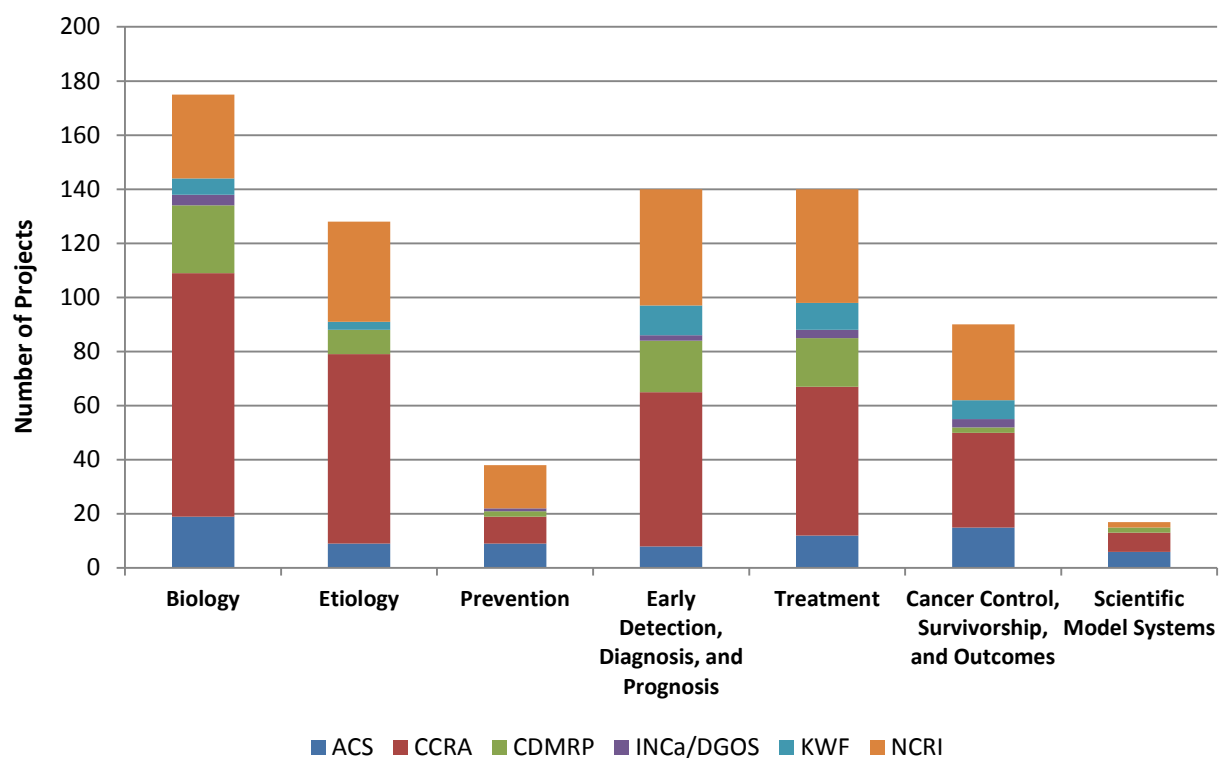


Figure 23. Research Related to Any Gynecologic Cancer Funded by ICRP Partners by Scientific Area, Most Recent CY

Figure 24 and Figure 25 show the distribution of cervical cancer research projects by scientific area for NCI and ICRP, respectively. The largest number of projects in the NCI portfolio focused on etiology, while the largest number of ICRP projects looked at cancer control, survivorship, and outcomes. The number of NCI projects focused on prevention and early detection, diagnosis, and prognosis increased between FY2008 and FY2011, while the number focusing on cancer control, survivorship, and outcomes decreased.

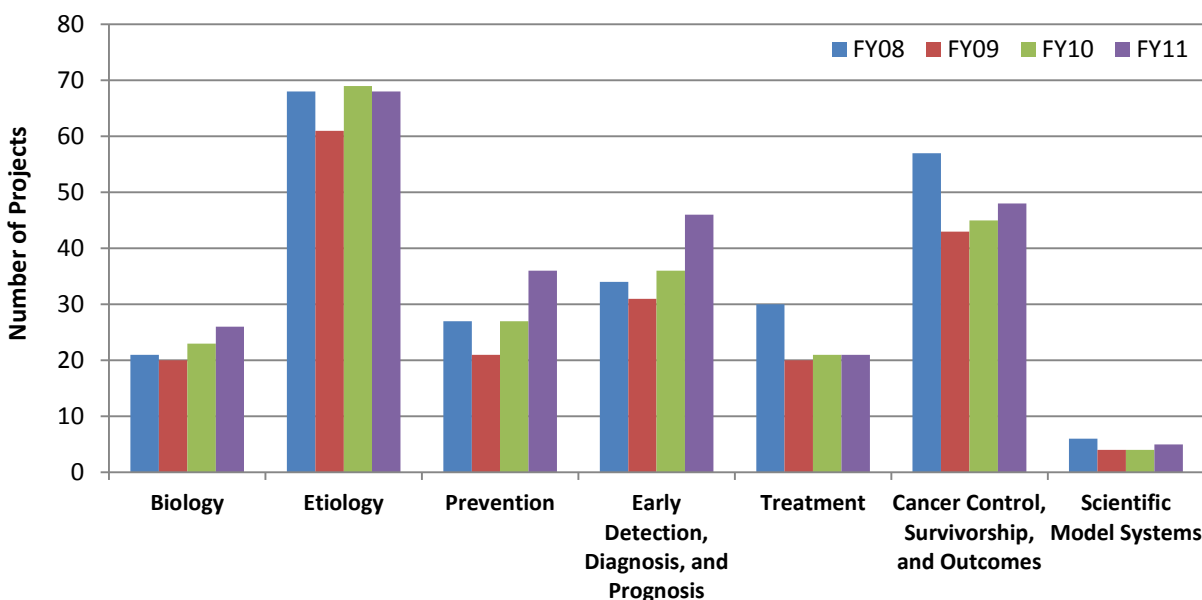


Figure 24. NCI-Funded Cervical Cancer Research by Scientific Area, FY2008-FY2011

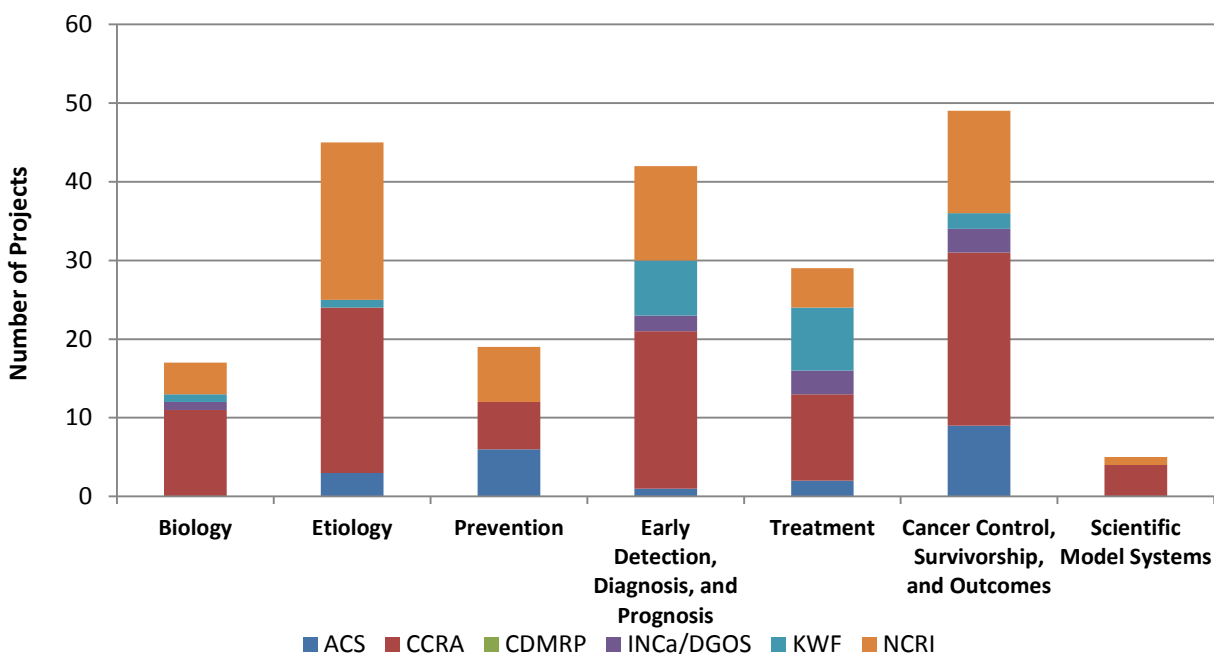


Figure 25. Cervical Cancer Projects Funded by ICRP Partners by Scientific Area, Most Recent CY

Figure 26 and Figure 27 illustrate the distribution of ovarian cancer research projects funded by NCI and ICRP, respectively. ICRP members invested strongly in research on the biology of ovarian cancer, while the largest numbers of projects in the NCI portfolio focused on treatment.

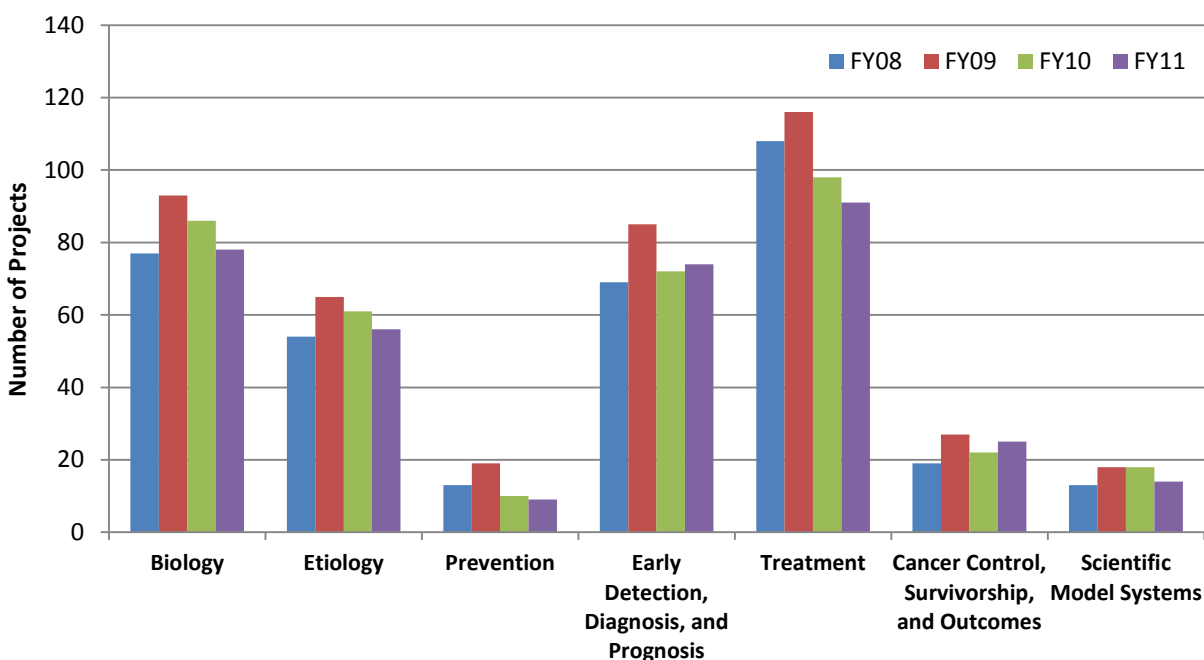


Figure 26. NCI-Funded Ovarian Cancer Research by Scientific Area, FY2008-FY2011

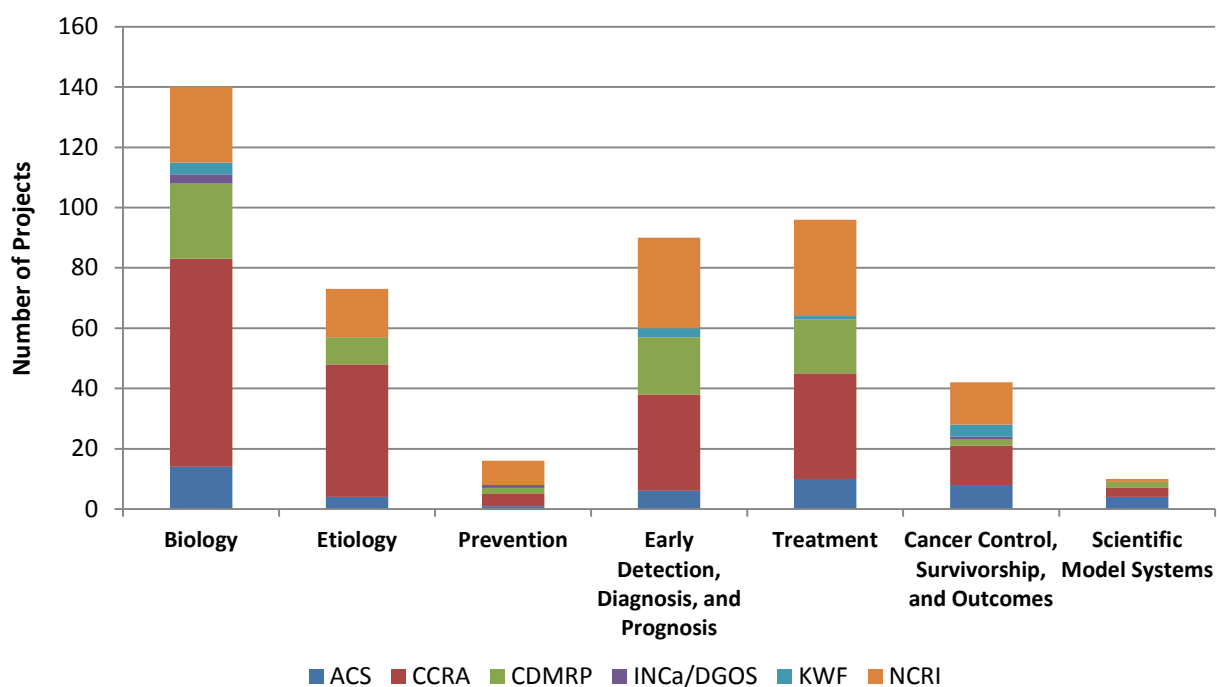


Figure 27. Ovarian Cancer Projects Funded by ICRP Partners by Scientific Area, Most Recent CY

Figure 28 and Figure 29 provide an overview of the distribution of uterine/endometrial cancer research projects funded by NCI and ICRP, respectively.²³ Both NCI and ICRP partners invested heavily in research on biology. NCI also supported a large number of projects related to etiology, while ICRP members collectively focused more on treatment. The numbers of NCI-funded uterine cancer projects related to treatment and etiology declined between FY2008 and FY2011 while investment in scientific model systems increased.

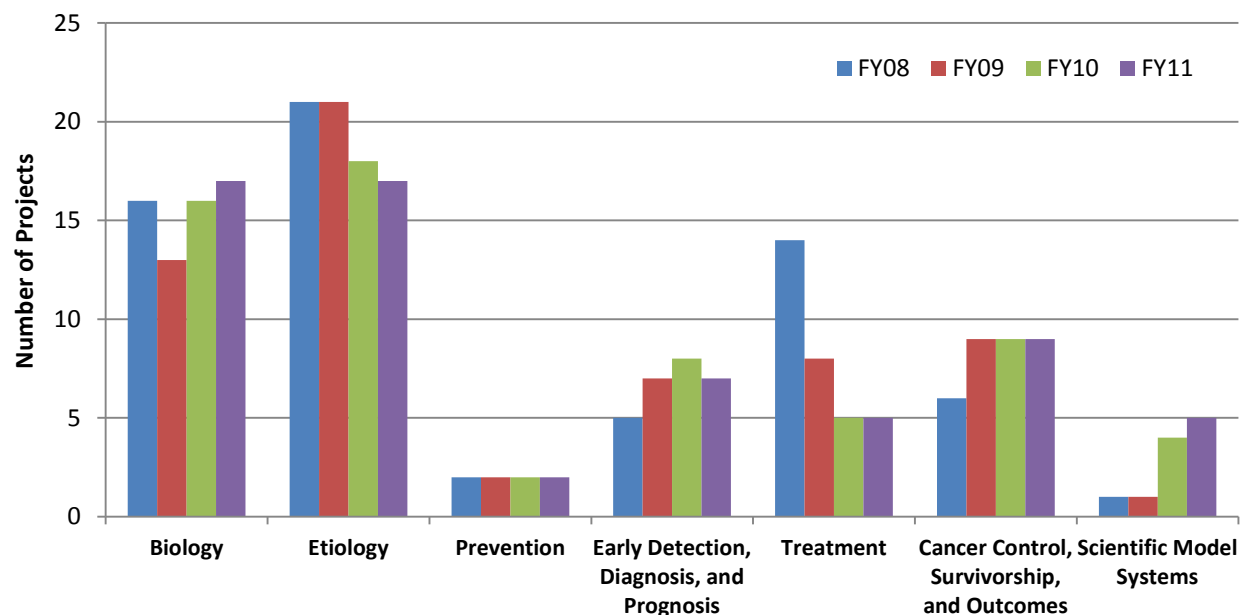


Figure 28. NCI-Funded Uterine Cancer Research by Scientific Area, FY2008-FY2011

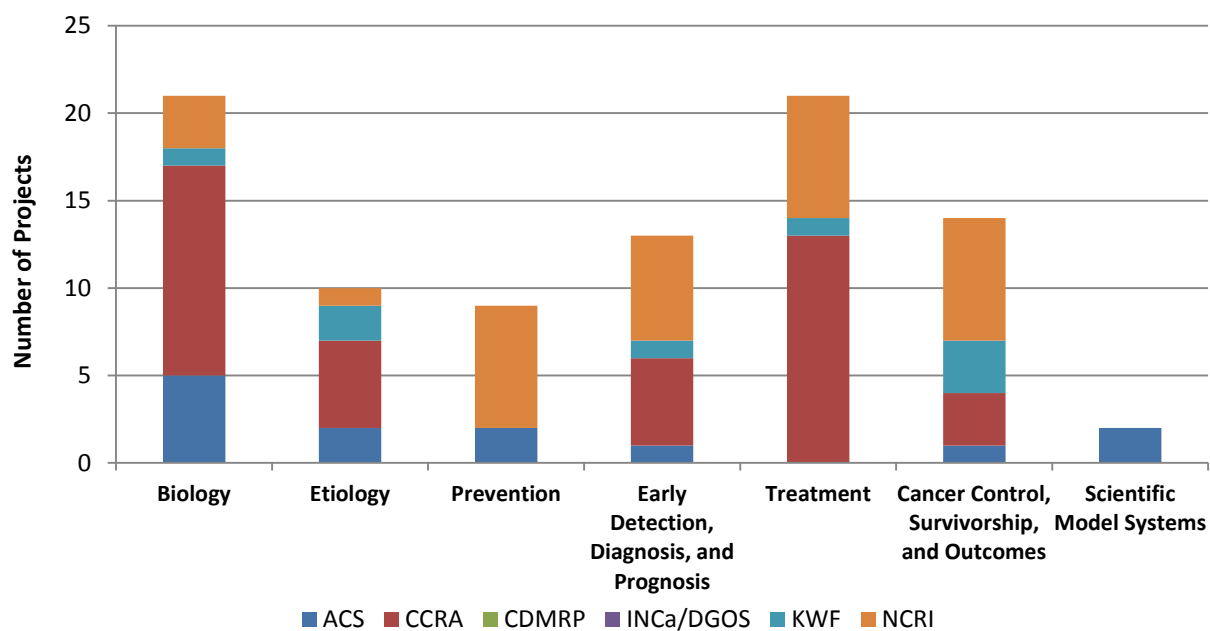


Figure 29. Endometrial Cancer Projects Funded by ICRP Partners by Scientific Area, Most Recent CY

²³ NCI uses the organ site code "uterine" while ICRP uses "endometrial" cancer.

Vaginal and vulvar cancers represent a considerably smaller subset of the portfolios of NCI and ICRP members than do the other, more common gynecologic cancers.²⁴ NCI's investment in vaginal cancer research is summarized in Figure 30. NCI supported projects related to vaginal cancer biology, etiology, and cancer control, survivorship, and outcomes. Vulvar cancer research supported by ICRP partners is shown in Figure 31. The largest number of ICRP projects focused on treatment.

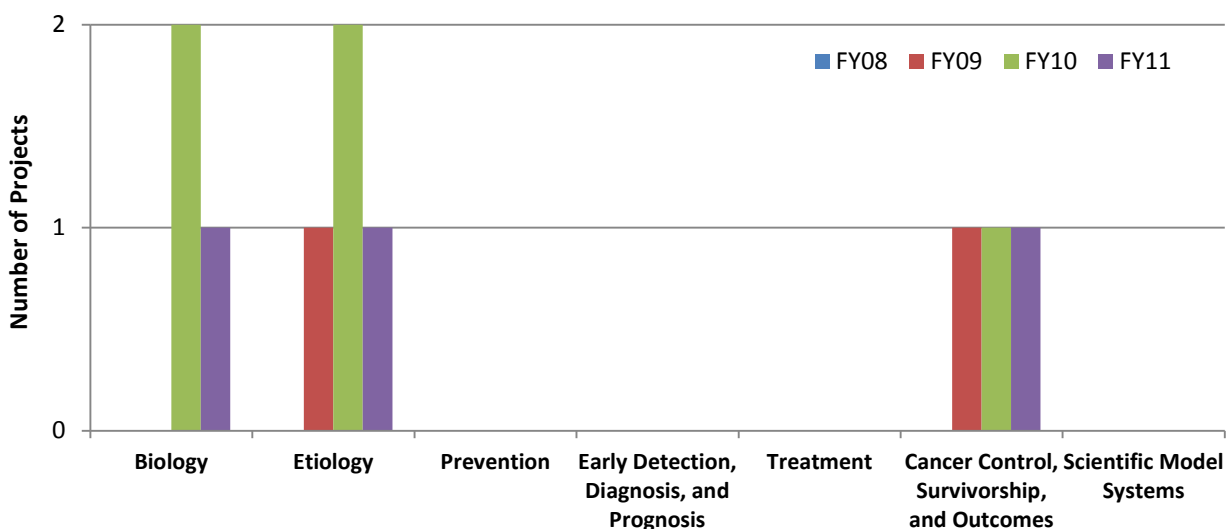


Figure 30. NCI-Funded Vaginal Cancer Research by Scientific Area, FY2008-FY2011

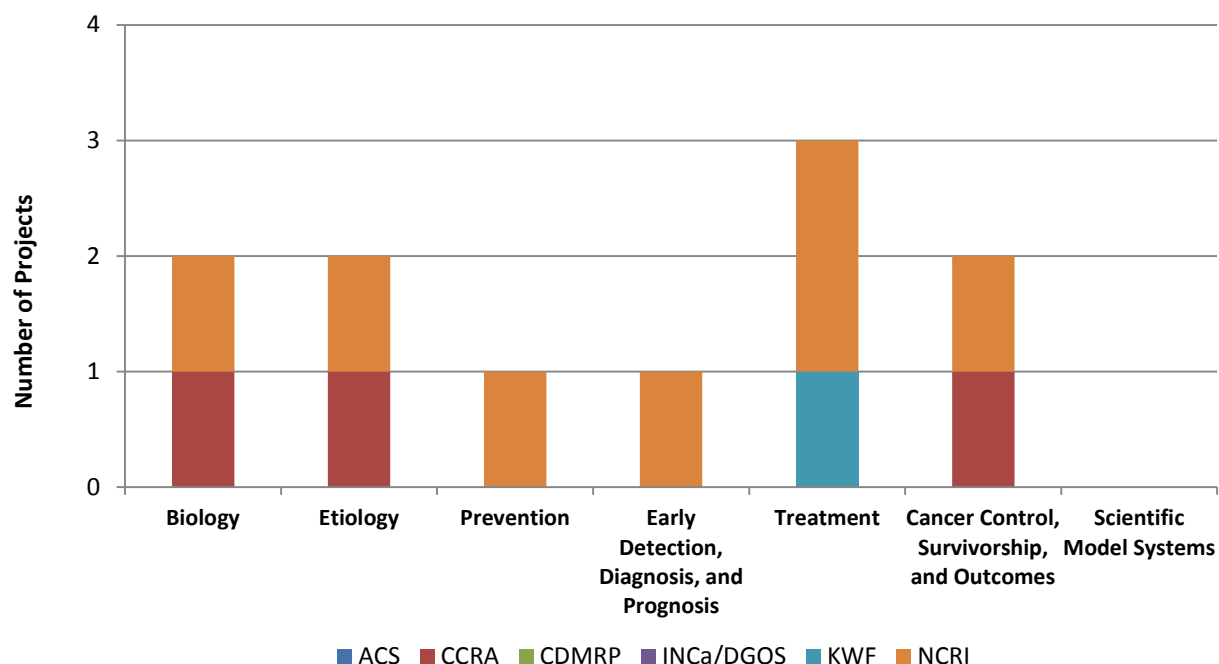


Figure 31. Vulvar Cancer Projects Funded by ICRP Partners by Scientific Area, Most Recent CY

²⁴ NCI does not have a code for vulvar cancer. ICRP codes for vaginal cancer, but there were no projects within the dataset used for this analysis that were at least 25% relevant to vaginal cancer.

BIOLOGY

Projects related to biology include those studying the processes involved in normal cell and organ function as well as those involved in cancer. The CSO defines four types of biology-related research—research on normal functioning, the role of chromosomal alterations in cancer initiation, the role of oncogenes and tumor suppressor genes in cancer initiation, and the processes involved in cancer progression and metastasis—and also includes a code for funding that supports resources and/or infrastructure for biology-related research. Approximately one-quarter of NCI-funded gynecologic cancer projects in FY2011 (116 of 464) included a component focused on biology, compared with nearly one-third of the collective ICRP portfolio (175 of 544). NCI- and ICRP-supported gynecologic cancer projects related to biology are shown in Figure 32 and Figure 33, respectively. There was biology-related research related to each of the gynecologic cancers, but this area was more highly represented in the ovarian and uterine/endometrial cancer portfolios (Figure 24 through Figure 31). Among the ovarian cancer and uterine/endometrial cancer projects, the highest numbers of projects focused on the genes involved in cancer initiation and the processes involved in cancer progression and metastasis.

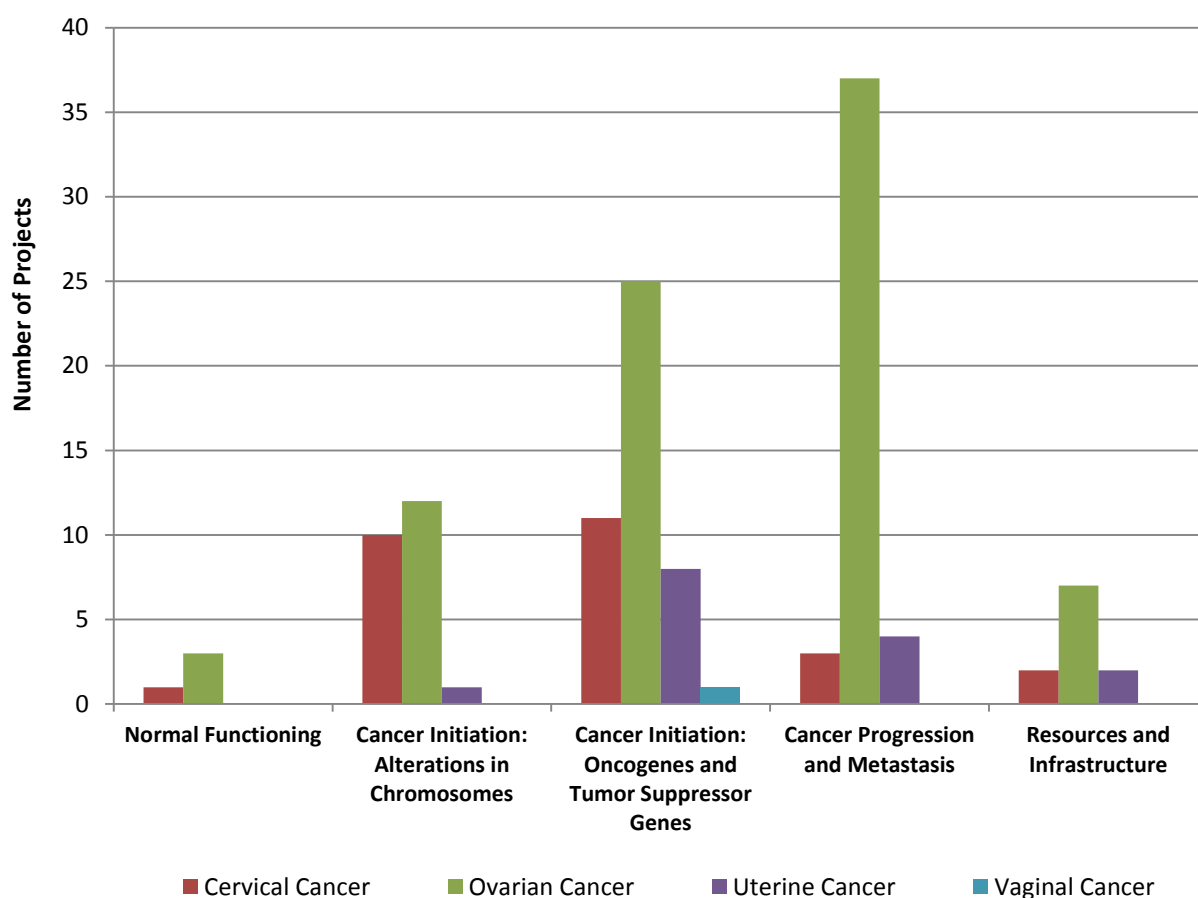


Figure 32. NCI-Funded Gynecologic Cancer Research Related to Biology, FY2011

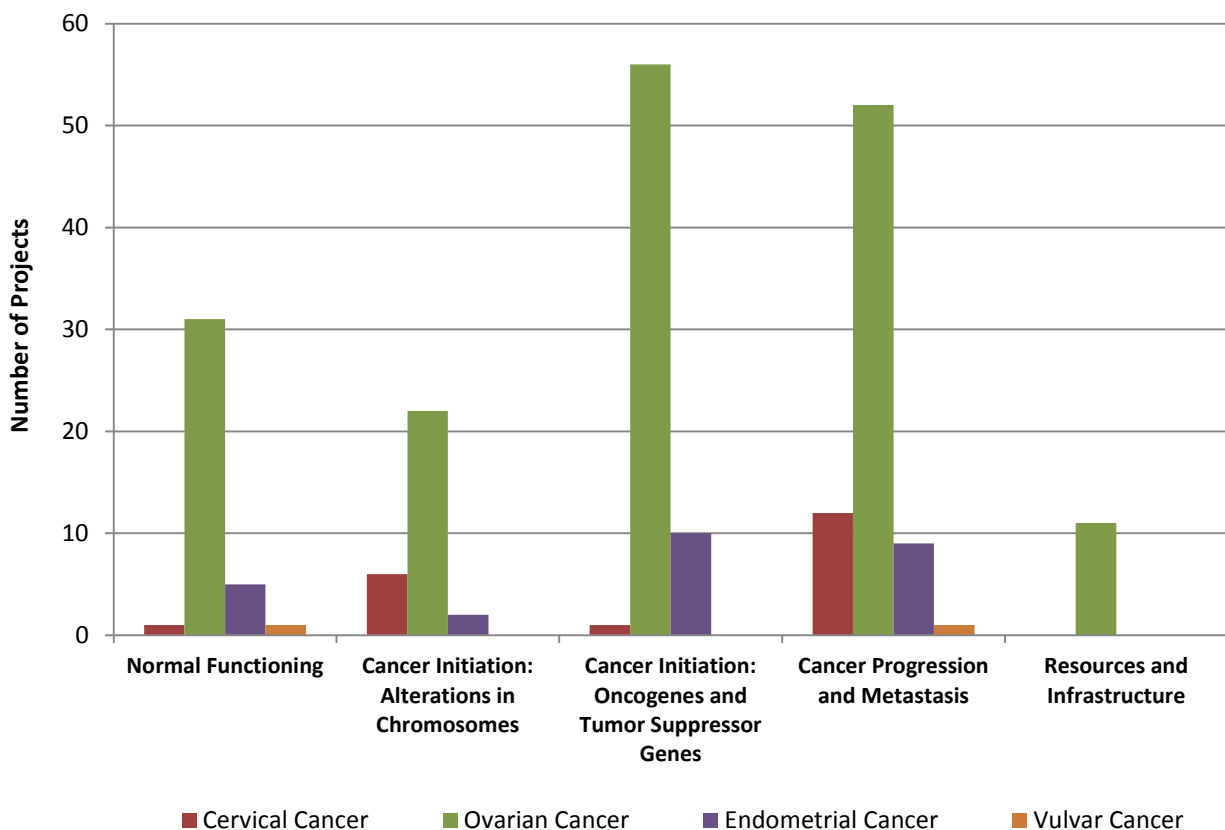


Figure 33. ICRP Partner-Funded Gynecologic Cancer Research Related to Biology (Most Recent CY)

ETIOLOGY

Projects related to etiology are focused on identifying the causes of cancer (e.g., genetic, environmental, lifestyle). The CSO defines four types of etiology projects: those focused on exogenous factors in the origin and cause of cancer; those focused on endogenous factors in the origin and cause of cancer; those focused on the interactions of genes with exogenous and/or endogenous factors; and those supporting resources and/or infrastructure for etiology research. NCI- and ICRP-funded projects related to the etiology of the various gynecologic cancer types are summarized in Figure 34 and Figure 35, respectively. Etiology has been the focus of a large proportion of NCI-funded cervical cancer and uterine/endometrial cancer projects (Figure 24 and Figure 28). NCI- and ICRP-funded research on the etiology of cervical cancer has focused primarily on the role of exogenous factors in the development of cancer, reflecting the important role of HPV in this cancer. One of the vaginal cancer projects funded by NCI in FY2011 focused on the role of HPV as an exogenous causal factor for this disease. Research on the etiology of uterine/endometrial cancer has focused more on the role of endogenous factors, consistent with the role of hormones in this disease.

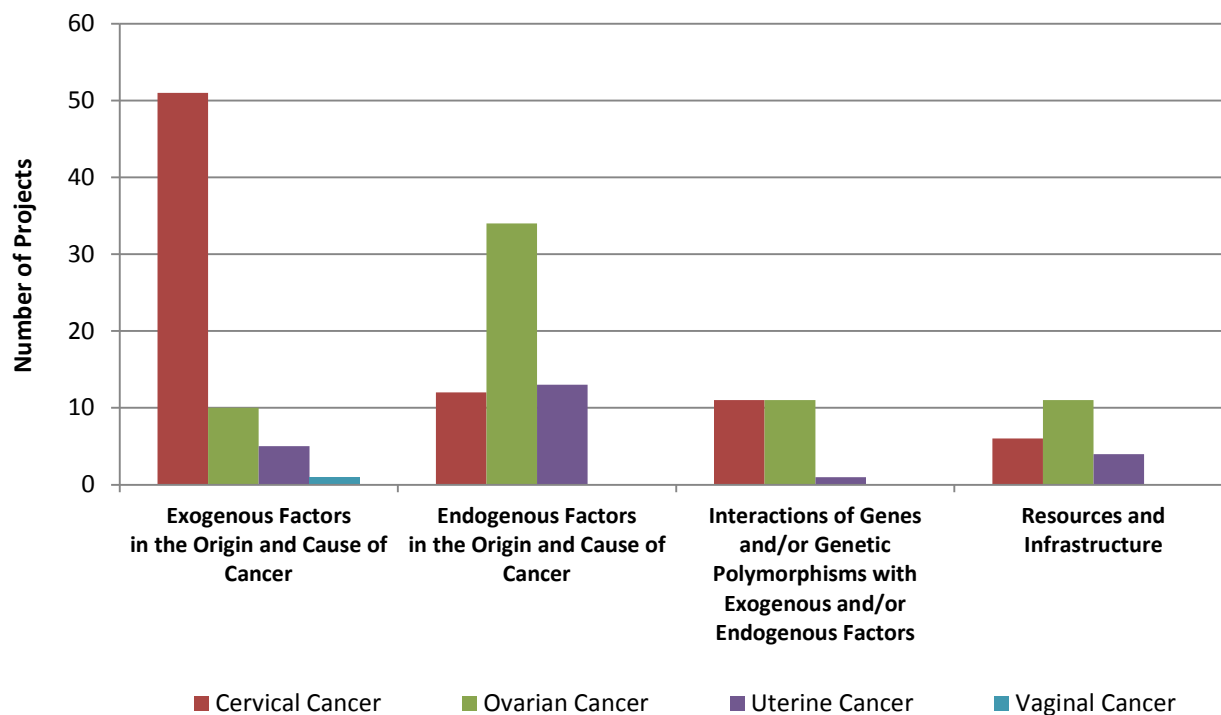


Figure 34. NCI-Funded Gynecologic Cancer Research Related to Etiology, FY2011

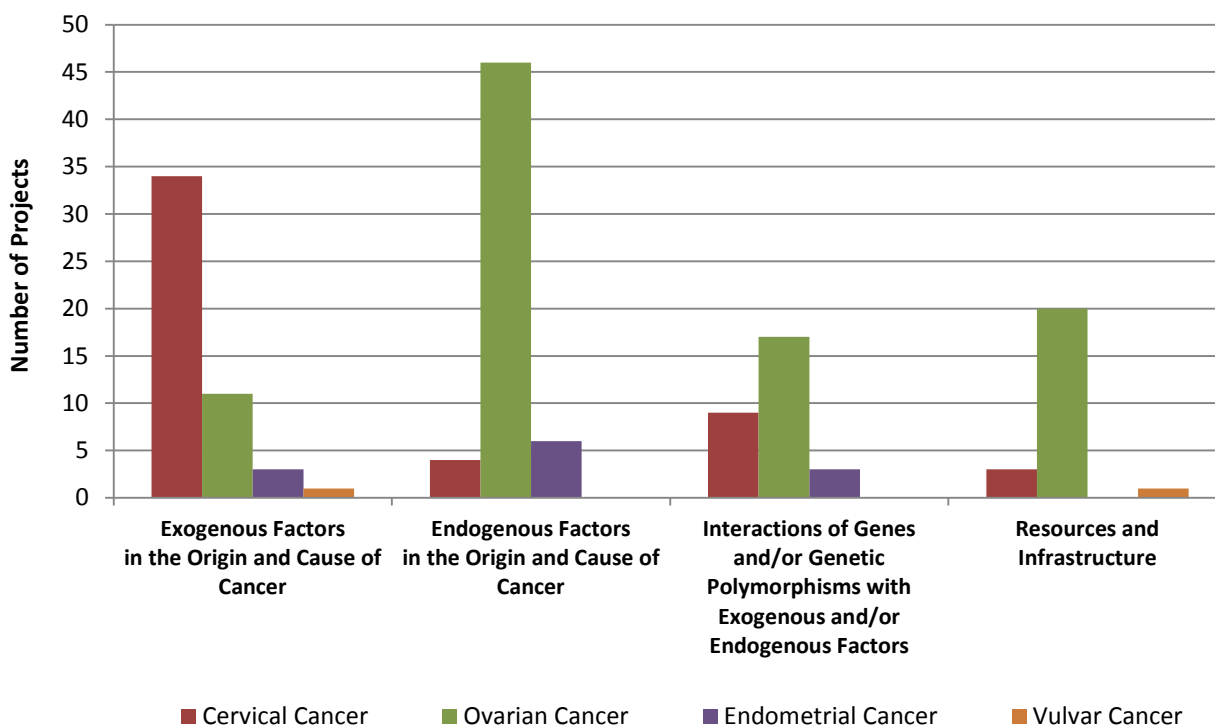


Figure 35. ICRP Partner-Funded Gynecologic Cancer Research Related to Etiology (Most Recent CY)

PREVENTION

Cancer prevention research involves the study of interventions with potential to reduce cancer risk by reducing exposure to cancer risks and increasing protective factors. The CSO identifies five types of prevention research: interventions involving personal behavior that affect cancer risk, nutritional science, chemoprevention, vaccines, and complementary/alternative approaches. In addition, there is a code for grants supporting resources/infrastructure for cancer prevention research. In general, prevention projects have comprised a smaller part of the gynecologic cancer portfolios of both NCI and ICRP than have projects related to biology; etiology; early detection, diagnosis, and prognosis; and cancer control, survivorship, and outcomes (Figure 22 and Figure 23). NCI- and ICRP-funded projects related to gynecologic cancer prevention are shown in Figure 36 and Figure 37, respectively. The majority of the prevention projects (36 of 47 NCI projects and 19 of 38 ICRP projects) had a focus on cervical cancer, although there have been prevention projects related to ovarian and uterine/endometrial cancer as well. Cervical cancer prevention projects primarily have been related to personal behavior interventions and vaccines; there also have been a substantial number of projects supporting infrastructure related to cervical cancer prevention. ICRP partners also have funded several projects related to chemoprevention of ovarian cancer.

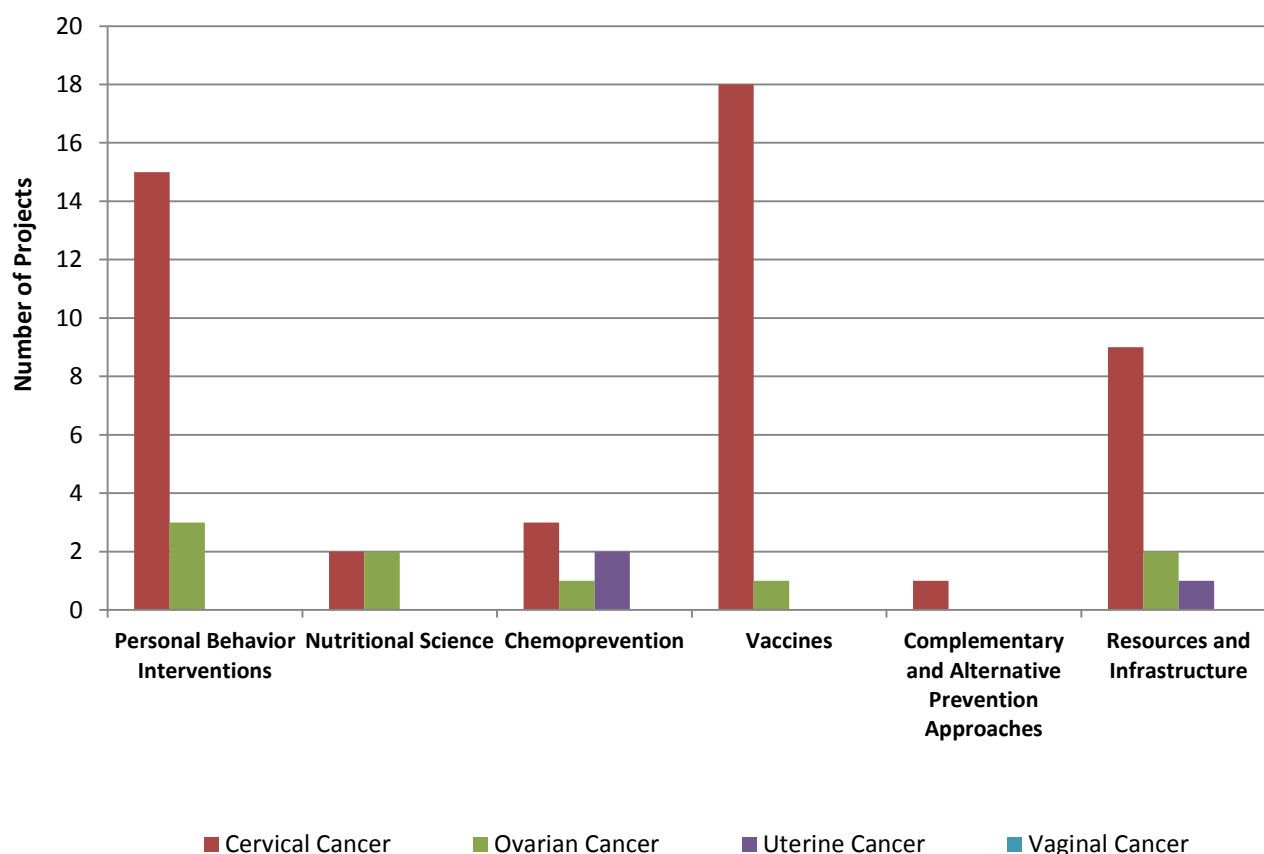


Figure 36. NCI-Funded Gynecologic Cancer Research Related to Prevention, FY2011

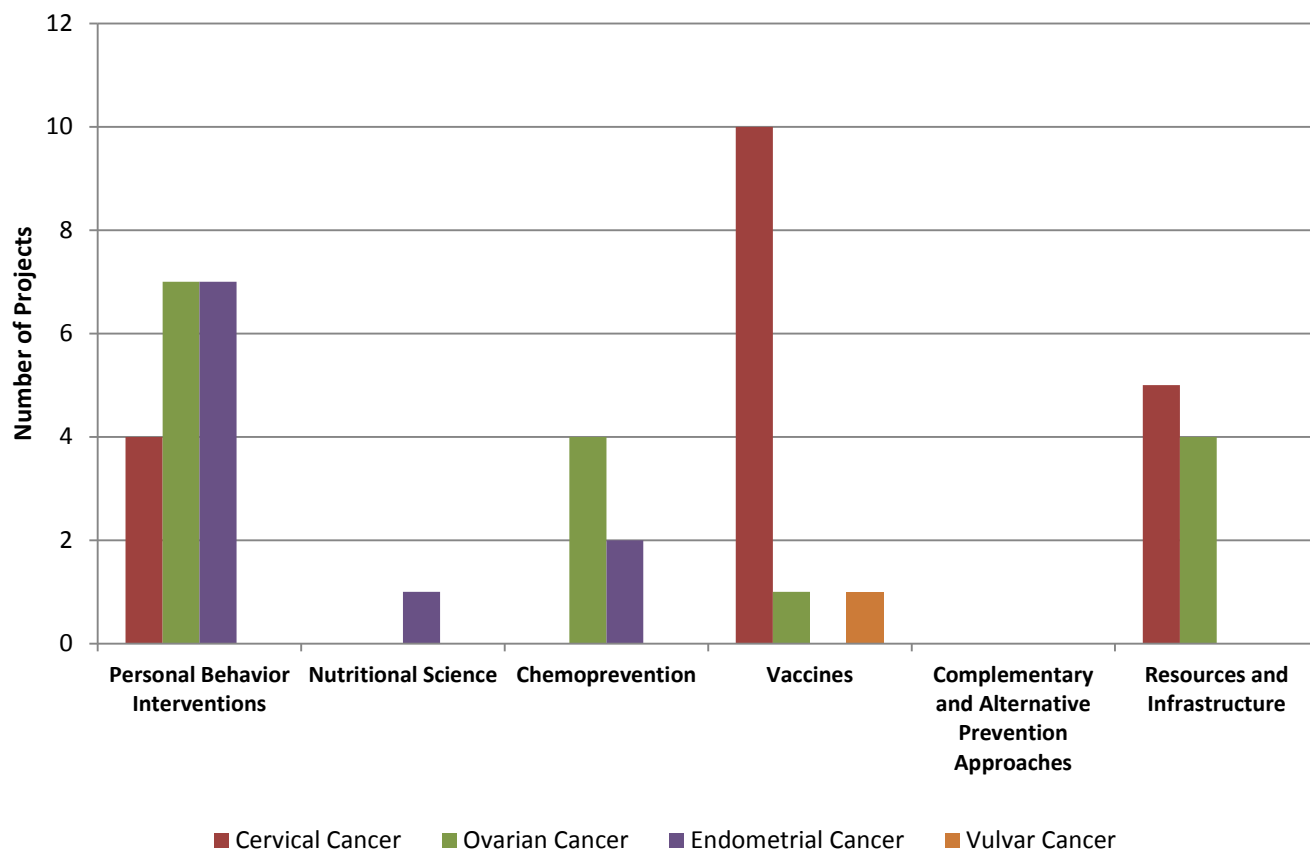


Figure 37. ICRP Partner-Funded Gynecologic Cancer Research Related to Prevention (Most Recent CY)

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS

Research in this category relates to the premise that cancer outcomes will be improved if the disease is detected before it has spread and if accurate information on diagnosis and prognosis can be used to guide treatment decisions. The CSO includes three types of research in this area: research on technology development and/or biomarker discovery; research on technology and/or marker evaluation in preclinical settings; and testing of technology and/or markers in a clinical setting. There is also a category for projects supporting resources and/or infrastructure related to early detection, diagnosis, and prognosis research. Approximately one-quarter of the gynecologic cancer projects funded by NCI (26.5% of FY2011 projects) and ICRP (26%) have been related to early detection, diagnosis, and prognosis. NCI- and ICRP-funded projects related to early detection, diagnosis, and prognosis of gynecologic cancers are shown in Figure 38 and Figure 39, respectively. Among ovarian cancer projects in this category, the majority funded by both NCI and ICRP have focused on technology development and/or marker discovery, reflecting the need for early detection tools for this cancer type. The small number of uterine/endometrial cancer projects in this category also tended to focus on early stages of discovery and development. Cervical cancer projects in the early detection, diagnosis, and prognosis category were more evenly distributed, with several projects supporting preclinical and clinical testing of technologies and/or markers.

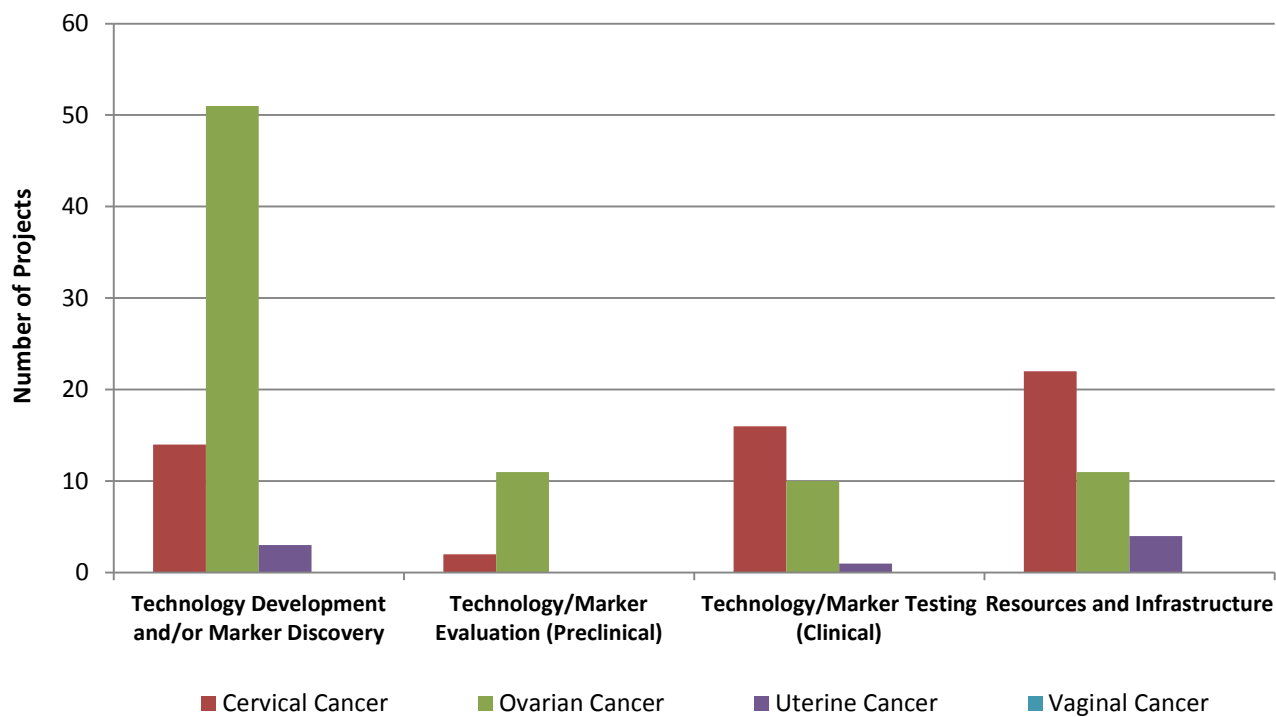


Figure 38. NCI-Funded Gynecologic Cancer Research Related to Early Detection, Diagnosis, and Prognosis, FY2011

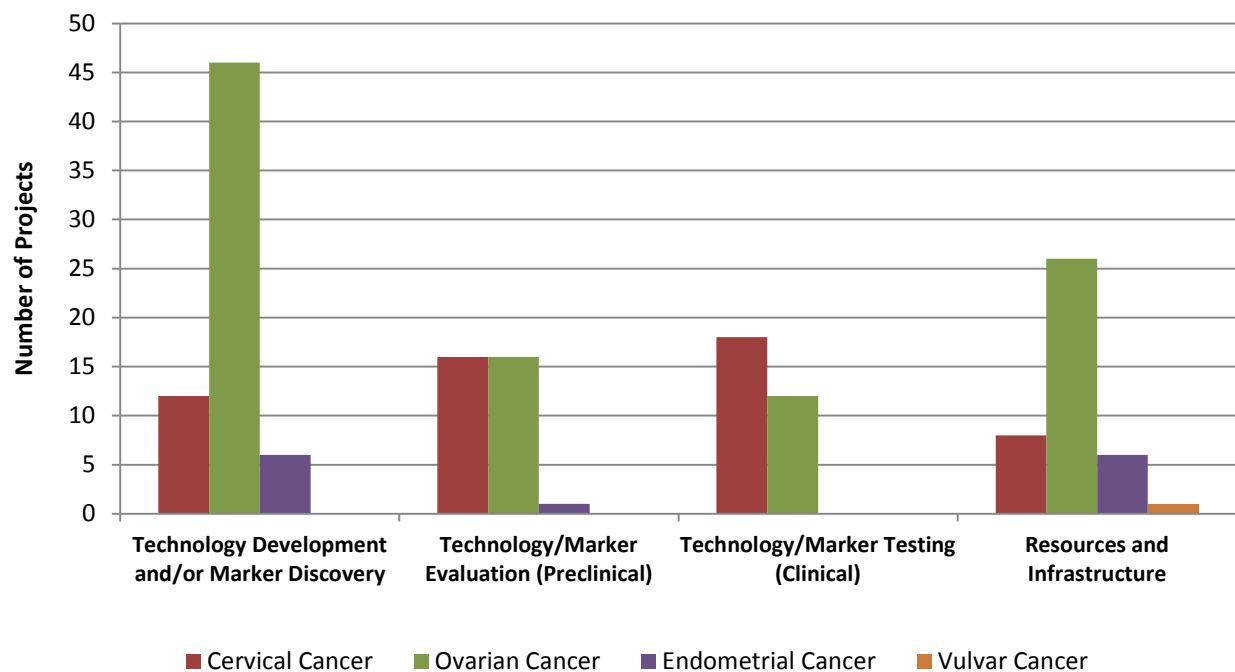


Figure 39. ICRP Partner-Funded Gynecologic Cancer Research Related to Early Detection, Diagnosis, and Prognosis (Most Recent CY)

TREATMENT

Research in this category includes an array of treatments for initial cancer and cancer recurrence. The CSO defines six types of treatment-related research: discovery and development of localized therapies (e.g., radiotherapy, surgery), clinical testing and application of localized therapies, discovery and development of systemic therapies (e.g., chemotherapy), clinical testing and application of systemic therapies, research on combinations of localized and systemic therapies, and research on complementary and alternative treatment approaches. In addition, there is a category for projects supporting resources and/or infrastructure related to treatment. Approximately one-quarter of the gynecologic cancer projects funded by NCI (25% of FY2011 projects) and ICRP (26%) have been related to treatment. NCI- and ICRP-funded projects related to treatment of gynecologic cancers are shown in Figure 40 and Figure 41, respectively. For both cervical and ovarian cancers, the focus of most treatment-related research projects has been on the discovery and development of systemic therapies.

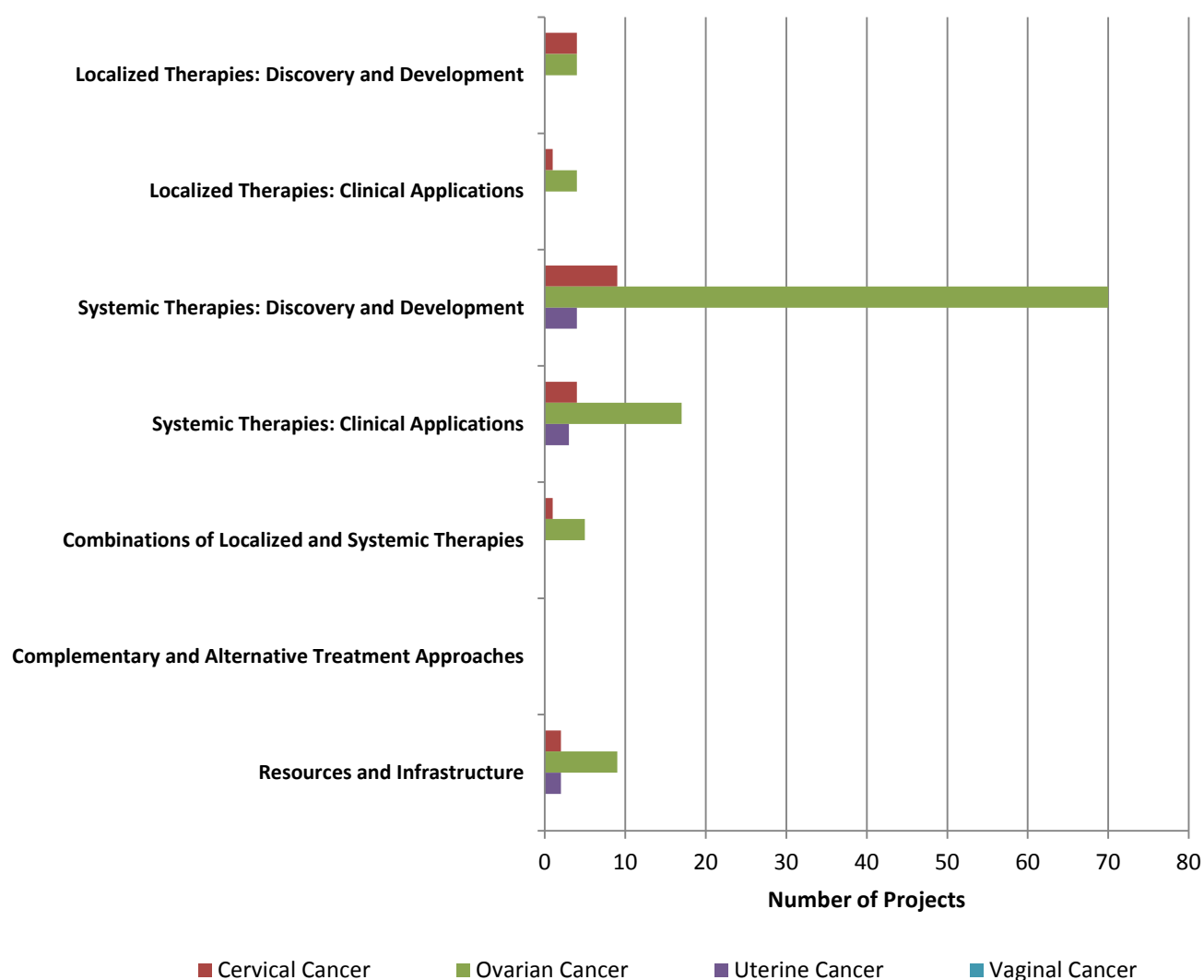


Figure 40. NCI-Funded Gynecologic Cancer Research Related to Treatment, FY2011

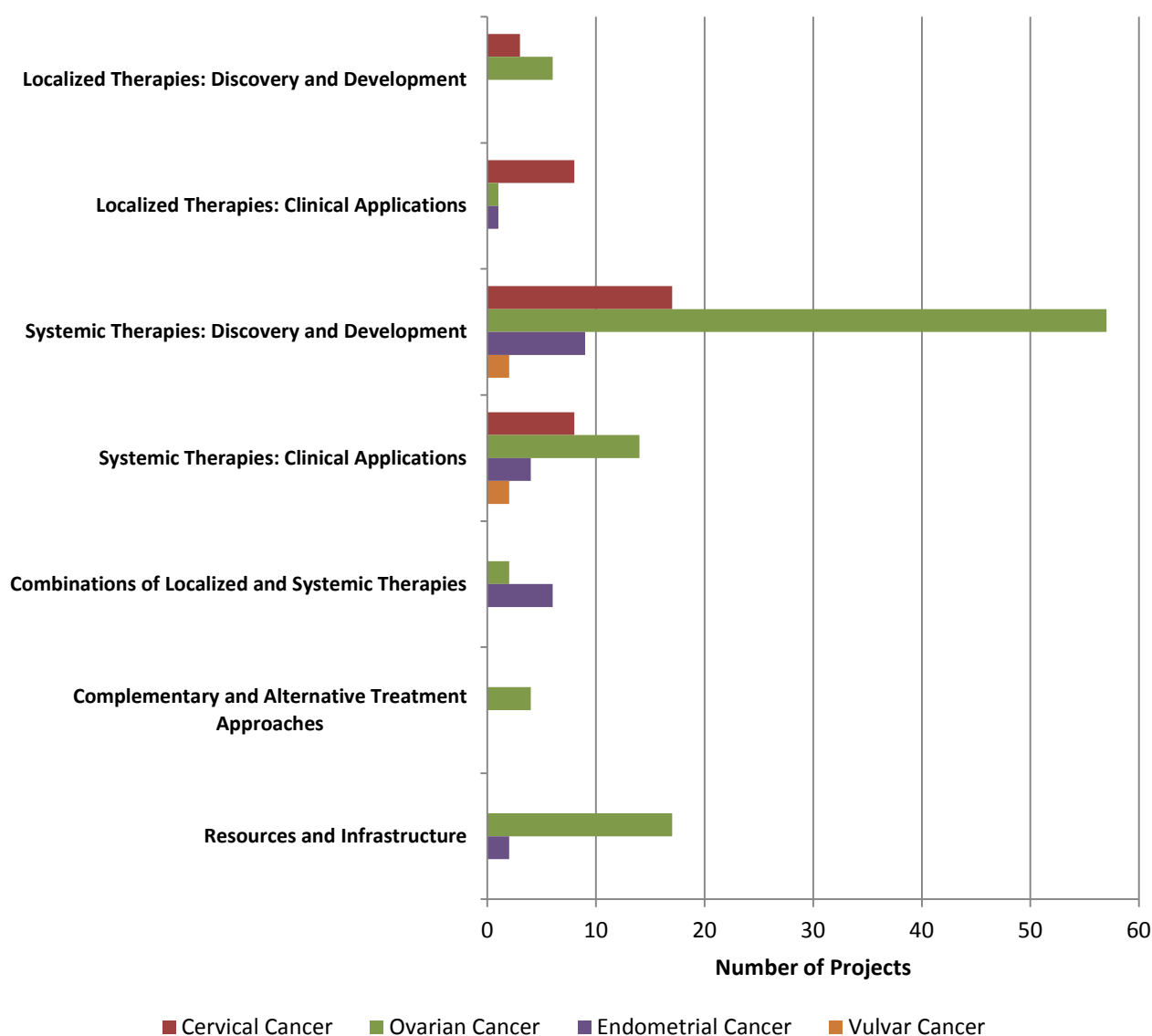


Figure 41. ICRP Partner-Funded Gynecologic Cancer Research Related to Treatment (Most Recent CY)

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES

The cancer control, survivorship, and outcomes category encompasses an array of research. In addition to a subcategory for projects supporting resources and/or infrastructure, the CSO defines eight types of research in this category: patient care and survivorship issues, surveillance, behavior, cost analyses and health care delivery, education and communication, end-of-life care, ethics and confidentiality in cancer research, and complementary and alternative approaches for supportive care of cancer patients and survivors. Research in this category has comprised approximately 15 percent of the NCI (FY2011) and ICRP portfolios, although a substantially higher percentage of cervical cancer projects have focused on this area (27% of NCI FY2011 and 31% of ICRP projects).

NCI- and ICRP-funded projects related to gynecologic cancer control, survivorship, and outcomes are shown in Figure 42 and Figure 43, respectively. Among the cervical cancer projects in the cancer control, survivorship, and outcomes category, most NCI projects have focused on education and communication and behavior. ICRP has funded a number of projects in these subcategories and also has invested in studies related to cost analyses and health care delivery.

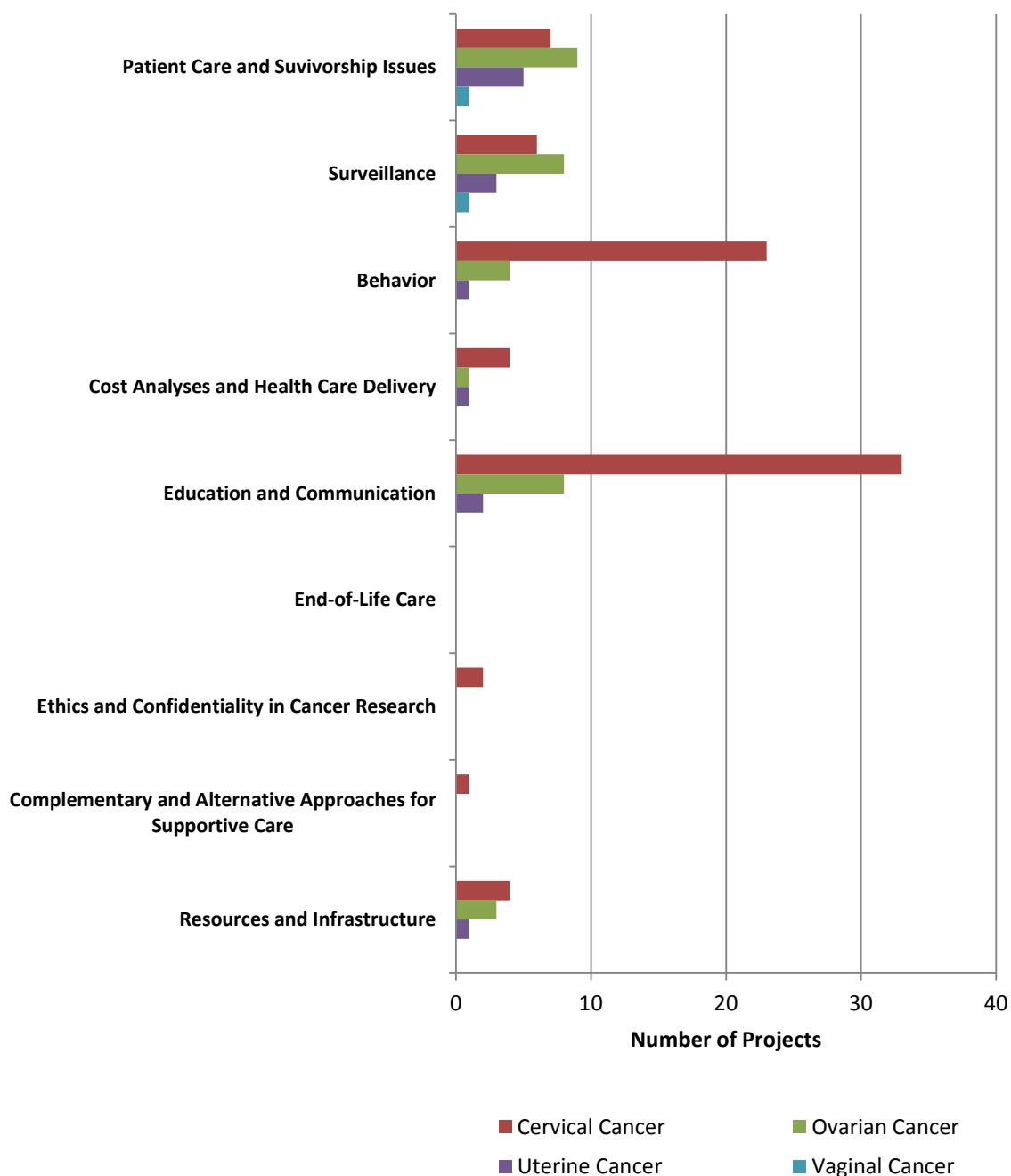


Figure 42. NCI-Funded Gynecologic Cancer Research Related to Cancer Control, Survivorship, and Outcomes, FY2011

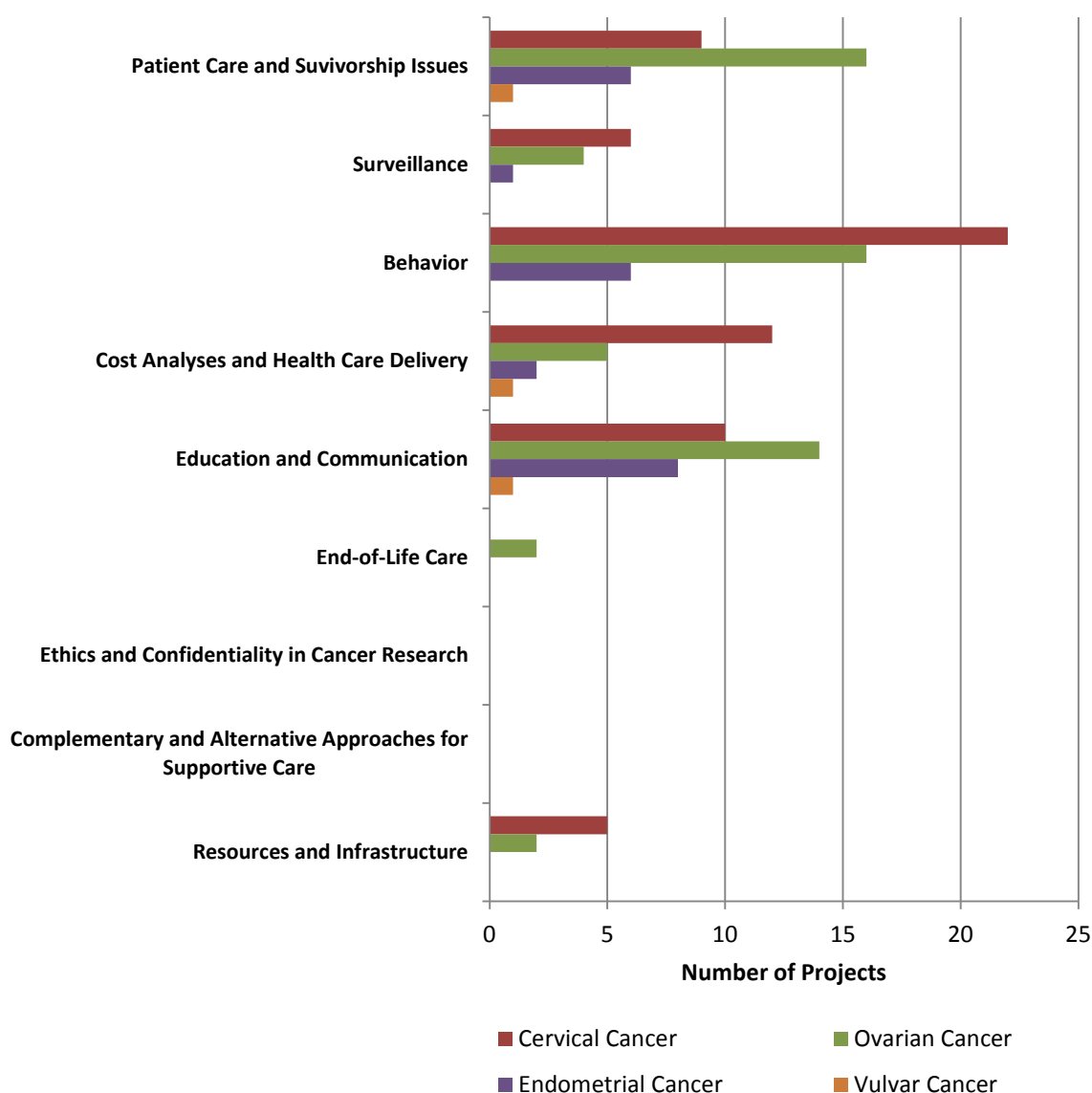


Figure 43. ICRP Partner-Funded Gynecologic Cancer Research Related to Cancer Control, Survivorship, and Outcomes (Most Recent CY)

SCIENTIFIC MODEL SYSTEMS

Research on scientific model systems includes research on the development and application of new animal models, cell culture systems, and computer simulations. The CSO defines three types of projects in this area: those developing and characterizing model systems, those studying applications of model systems, and those supporting resources and infrastructure related to model systems. Research on scientific model systems has comprised a small percentage of the overall gynecologic cancer portfolios of NCI (4.7% in FY2011) and ICRP (3.1%). NCI- and ICRP-funded projects related to gynecologic cancer model systems are shown in Figure 44 and Figure 45, respectively. In general, research on ovarian cancer model systems has focused on development and characterization, while cervical and uterine research in this area has been spread more evenly between development/characterization and application.

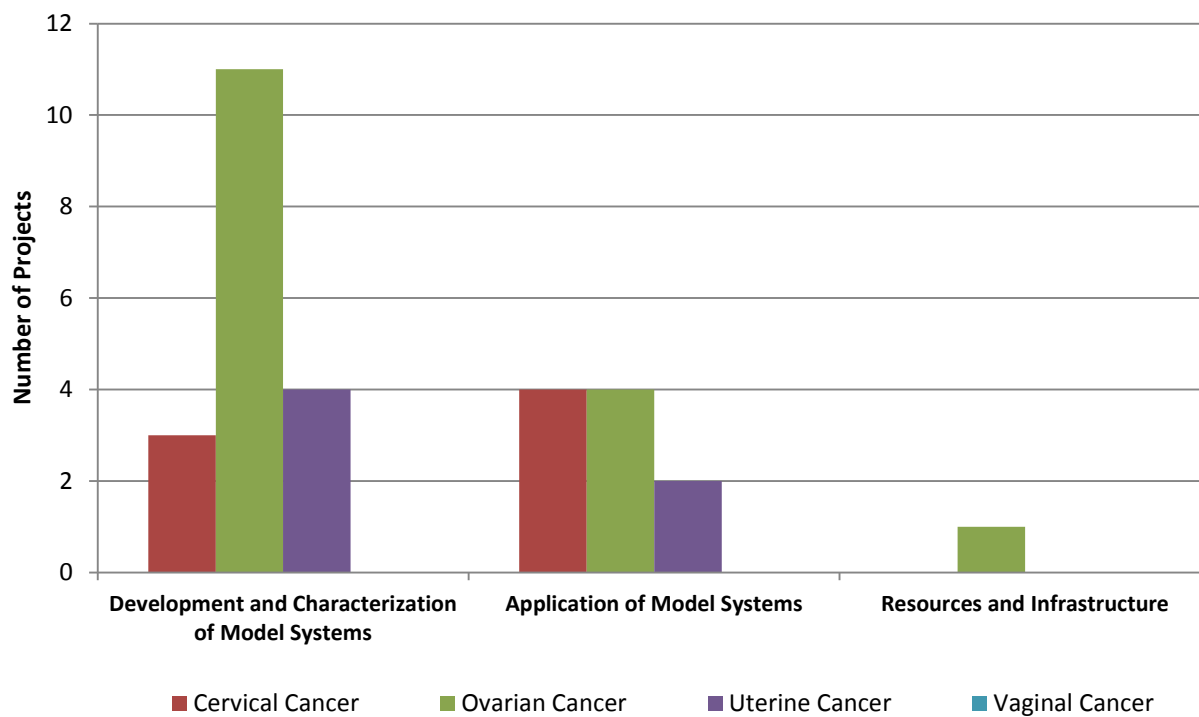


Figure 44. NCI-Funded Gynecologic Cancer Research Related to Scientific Model Systems, FY2011

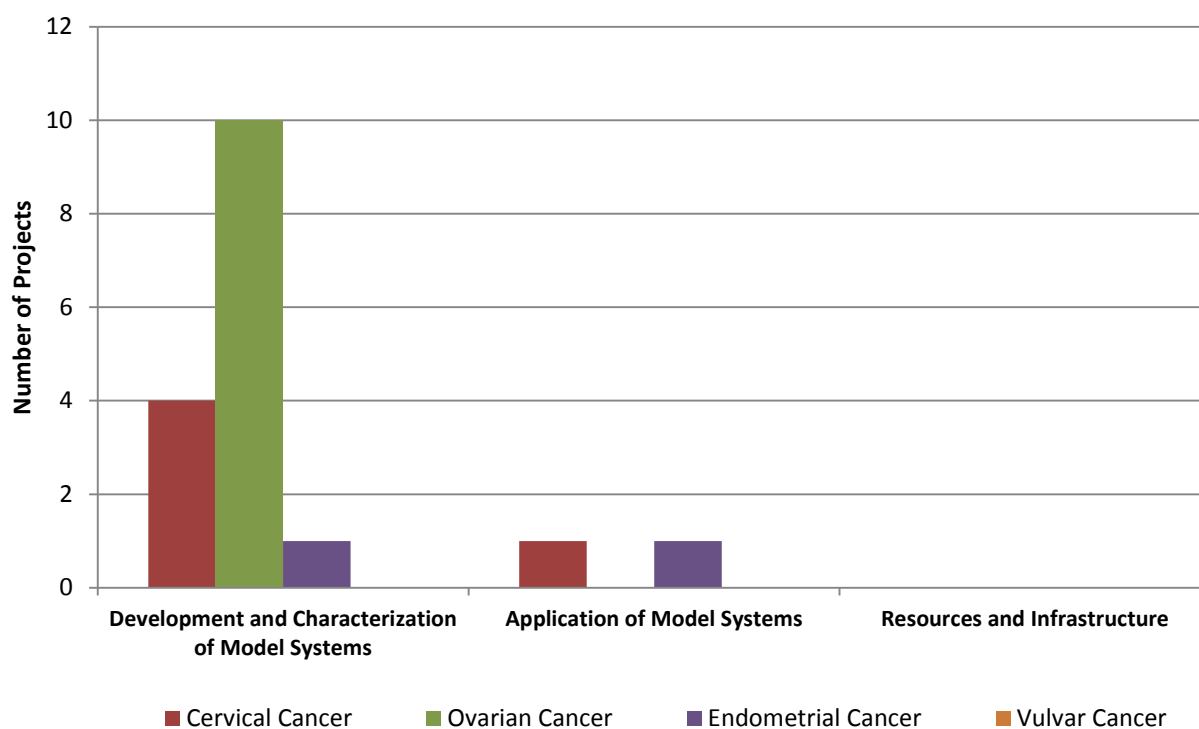


Figure 45. ICRP Partner-Funded Gynecologic Cancer Research Related to Scientific Model Systems (Most Recent CY)

CONCLUSIONS

NCI and the ICRP partner organizations are investing in an array of research related to gynecologic cancers, with a focus on the most common of these—cervical, ovarian, and uterine cancers. The risk factors for each of the gynecologic cancers, while overlapping in some cases, are different, as are the challenges associated with detecting, diagnosing, and treating cancer at each of these sites. The scientific focus of the research portfolios for each of these cancer types reflects these differences. Although the NCI and ICRP portfolios exhibit many similarities in the distribution of projects across cancer types and areas of scientific focus, there are some differences, illustrating that the involvement of several funding organizations can result in a more comprehensive research effort. A collaborative and multifaceted approach is needed to build on recent progress against gynecologic cancers and to capitalize on opportunities for prevention, early detection, and treatment of these diseases.

APPENDIX A: METHODS

NCI-funded research projects related to gynecologic cancers (i.e., cervical cancer, uterine cancer, ovarian cancer, vaginal cancer) were identified using the NCI Funded Research Portfolio (NFRP; <http://fundedresearch.cancer.gov/>). NCI Fact Books (<http://obf.cancer.gov/financial/factbook.htm>) also were used to obtain historical data on funding for gynecologic cancer sites.

NCI-sponsored clinical trials actively recruiting gynecologic cancer patients were identified using the NCI Search for Clinical Trials website (<http://www.cancer.gov/clinicaltrials/search>) in July 2012. The following sites were included in the search: cervical cancer, endometrial cancer, fallopian tube cancer, germ cell tumor, ovarian epithelial cancer, ovarian germ cell tumor, ovarian low malignant potential tumor, ovarian sarcoma, ovarian stromal cancer, uterine sarcoma, vaginal cancer, and vulvar cancer. Trials then were reviewed manually to determine the relevance to one or more gynecologic cancers. Trials with marginal relevance (e.g., focused on a large number of cancer types, including but not limited to gynecologic cancers) were not included in the results.

The ICRP web-based database (<https://www.icrppartnership.org/>) was used to identify research related to gynecologic cancers (i.e., cervical cancer, endometrial cancer, ovarian cancer, vaginal cancer, vulvar cancer) funded by ICRP partners (with the exception of CCRA) in 2009, 2010, 2011, and 2012. CCRA provided data separately so that more current data could be included. ACS provided supplemental data so that more current data could be included. ICRP partners have different fiscal years and submit data on different schedules, which makes it difficult to conduct a comprehensive analysis of the portfolio for any given period of time (fiscal or calendar year). To account for these differences, the analyses presented herein include the most recent complete calendar year for each of the ICRP partners or partner groups (i.e., CCRA, NCRI). The most recent calendar years for each organization range from 2009 to 2012 and are listed in Appendix B. This approach allowed for characterization of the extent and type of research that likely would be supported by ICRP partners in a given calendar year. For funding calculations, award funding per day for each project was calculated based on total funded amount and budget period. Award funding per day was used to calculate total funding for each calendar year based on the number of days the project was active in that year (determined using award start and end dates). Funding dollars were converted to U.S. dollars as necessary using the conversion rates in Appendix D. Visit the ICRP web site for details about caveats associated with data for each ICRP organization.

NCI and ICRP partners code their portfolios to a variety of organ sites and research categories, including the Common Scientific Outline. Each project is assigned a “percent relevance” to the cancer site(s) to which it is coded. A grant may be 100 percent relevant to multiple sites, and the sum of the percent relevance assignments of a grant may exceed 100 percent. Some organizations assign percent relevance values for assigned CSO codes; for the purposes of this analysis, if percent relevance scores were not assigned, it was assumed that the project was equally relevant to all assigned codes (e.g., if two CSO codes were assigned, it was assumed that the grant was 50% relevant to each code). For funding calculations, dollar amounts for each project were prorated based on site relevance and/or CSO relevance. For example, for a project with \$100,000 in funding that is 50 percent relevant to ovarian cancer and coded to CSO 1.1 (Biology: Normal Functioning) and CSO 3.3 (Prevention: Chemoprevention), \$25,000 in funding would be attributed to ovarian cancer biology and \$25,000 would be attributed to ovarian cancer prevention. When numbers of projects relevant to a cancer site or CSO category/subcategory were calculated, only projects at least 25 percent relevant to the cancer site of interest were included.

Statistics on incidence, mortality, and survival rates for each of the gynecologic cancers were obtained from the NCI Surveillance, Epidemiology and End Results (SEER) program. Hispanic classification is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indian/Alaska Natives.

APPENDIX B: ICRP ORGANIZATIONS SUPPORTING RESEARCH ON GYNECOLOGIC CANCERS

ICRP Partner/Partner Group	Acronym	Partner Group Members	Most Recent Calendar Year
American Cancer Society	ACS	--	2012
Canadian Cancer Research Alliance ²⁵	CCRA	Alberta Cancer Foundation Alberta Innovates—Health Solutions Brain Tumor Foundation of Canada BC Cancer Agency C ¹⁷ Research Network Canadian Association of Provincial Cancer Agencies Canadian Association of Radiation Oncology Canadian Breast Cancer Foundation Canadian Cancer Society Canadian Institutes of Health Research Canadian Partnership Against Cancer Cancer Care Manitoba Cancer Care Nova Scotia Cancer Care Ontario Cancer Research Society Fonds de recherche du Québec-Santé Genome Canada The Kidney Foundation of Canada Leukemia & Lymphoma Society of Canada Manitoba Health Research Council Michael Smith Foundation for Health Research National Research Council Natural Sciences and Engineering Research Council of Canada New Brunswick Cancer Support Nova Scotia Health Research Foundation Ontario Institute for Cancer Research Ovarian Cancer Canada PROCURE	2009

²⁵ All CCRA members are listed, not only those that fund gynecologic cancer research.

Gynecologic Cancers Portfolio Analysis

ICRP Partner/Partner Group	Acronym	Partner Group Members	Most Recent Calendar Year
		Prostate Cancer Canada Public Health Agency of Canada Quebec Breast Cancer Foundation Saskatchewan Cancer Agency The Terry Fox Foundation	
U.S. Department of Defense Congressionally Directed Medical Research Program	CDMRP	--	2011
Institut du Cancer/DGOS Ministère de la Santé	INCa/DGOS	Institut du Cancer DGOS Ministère de la Santé	2009
KWF Kankerbestrijding/Dutch Cancer Society	KWF	--	2011
National Cancer Research Institute²⁶	NCRI	Association for International Cancer Research Biotechnology and Biological Sciences Research Council Breast Cancer Campaign Cancer Research UK Department of Health Economic and Social Research Council Macmillan Cancer Support Medical Research Council Northern Ireland Health & Social Care R&D Office Scottish Government Health Directorates, Chief Scientist Office Tenovus Welsh Government National Institute for Social Care and Health Research The Wellcome Trust Yorkshire Cancer Research	2010

²⁶ Includes only NCRI members that funded gynecologic cancer research in 2009-2012.

APPENDIX C: COMMON SCIENTIFIC OUTLINE

CSO Category	Subcategories
1. Biology	<ul style="list-style-type: none"> 1.1 Normal Functioning 1.2 Cancer Initiation: Alterations in Chromosomes 1.3 Cancer Initiation: Oncogenes and Tumor Suppressor Genes 1.4 Cancer Progression and Metastasis 1.5 Resources and Infrastructure
2. Etiology	<ul style="list-style-type: none"> 2.1 Exogenous Factors in the Origin and Cause of Cancer 2.2 Endogenous Factors in the Origin and Cause of Cancer 2.3 Interactions of Genes and/or Genetic Polymorphisms with Exogenous and/or Endogenous Factors 2.4 Resources and Infrastructure Related to Etiology
3. Prevention	<ul style="list-style-type: none"> 3.1 Interventions to Prevent Cancer: Personal Behaviors That Affect Cancer Risk 3.2 Nutritional Science in Cancer Prevention 3.3 Chemoprevention 3.4 Vaccines 3.5 Complementary and Alternative Prevention Approaches 3.6 Resources and Infrastructure Related to Prevention
4. Early Detection, Diagnosis, and Prognosis	<ul style="list-style-type: none"> 4.1 Technology Development and/or Marker Discovery 4.2 Technology and/or Marker Evaluation With Respect to Fundamental Parameters of Method 4.3 Technology and/or Marker Testing in a Clinical Setting 4.4 Resources and Infrastructure Related to Detection, Diagnosis, or Prognosis
5. Treatment	<ul style="list-style-type: none"> 5.1 Localized Therapies – Discovery and Development 5.2 Localized Therapies – Clinical Applications 5.3 Systemic Therapies – Discovery and Development 5.4 Systemic Therapies – Clinical Applications 5.5 Combinations of Localized and Systemic Therapies 5.6 Complementary and Alternative Treatment Approaches 5.7 Resources and Infrastructure Related to Treatment and the Prevention of Recurrence

CSO Category	Subcategories
6. Cancer Control, Survivorship, and Outcomes Research	<ul style="list-style-type: none"> 6.1 Patient Care and Survivorship Issues 6.2 Surveillance 6.3 Behavior 6.4 Cost Analyses and Health Care Delivery 6.5 Education and Communication 6.6 End-of-Life Care 6.7 Ethics and Confidentiality in Cancer Research 6.8 Complementary and Alternative Approaches for Supportive Care of Patients and Survivors 6.9 Resources and Infrastructure Related to Cancer Control, Survivorship, and Outcomes Research
7. Scientific Model Systems	<ul style="list-style-type: none"> 7.1 Development and Characterization of Model Systems 7.2 Application of Model Systems 7.3 Resources and Infrastructure Related to Scientific Model Systems

APPENDIX D: CURRENCY CONVERSION RATES

Table 1. Rates used to convert currency of original award to U.S. dollars

Original Currency	Organizations	2009	2010	2011	2012
CAD	CCRA	0.85078	0.96061	1.01200	0.97820
EUR	INCa/DGOS, KWF	1.35475	1.35730	1.39430	1.29570
GBP	NCRI	1.55160	1.55916	1.60500	1.55360

APPENDIX E: NCI FY2011 PROJECTS BY DISEASE SITE AND SCIENTIFIC AREA

<i>Cervical Cancer Projects</i>	41
Biology (CSO 1)	41
Etiology (CSO 2)	43
Prevention (CSO 3).....	46
Early Detection, Diagnosis, and Prognosis (CSO 4)	49
Treatment (CSO 5)	52
Cancer Control, Survivorship, and Outcomes Research (CSO 6)	54
Scientific Model Systems (CSO 7)	58
<i>Ovarian Cancer Projects</i>	59
Biology (CSO 1)	59
Etiology (CSO 2)	64
Prevention (CSO 3).....	67
Early Detection, Diagnosis, and Prognosis (CSO 4)	68
Treatment (CSO 5)	72
Cancer Control, Survivorship, and Outcomes Research (CSO 6)	77
Scientific Model Systems (CSO 7)	80
<i>Uterine Cancer Projects</i>	81
Biology (CSO 1)	81
Etiology (CSO 2)	83
Prevention (CSO 3).....	84
Early Detection, Diagnosis, and Prognosis (CSO 4)	85
Treatment (CSO 5)	86
Cancer Control, Survivorship, and Outcomes Research (CSO 6)	87
Scientific Model Systems (CSO 7)	89
<i>Vaginal Cancer Projects</i>	90
Biology (CSO 1)	90
Etiology (CSO 2)	90
Prevention (CSO 3).....	91
Early Detection, Diagnosis, and Prognosis (CSO 4)	91
Treatment (CSO 5)	91
Cancer Control, Survivorship, and Outcomes Research (CSO 6)	91
Scientific Model Systems (CSO 7)	92

CERVICAL CANCER PROJECTS

BIOLOGY (CSO 1)*NORMAL FUNCTIONING (CSO 1.1)*

No.	Mech	Project #	Principal Investigator	Project Title
1.	ZIA	CP010216	Safaeian, Mahboobeh	HPV Immunology Studies

CANCER INITIATION: ALTERATIONS IN CHROMOSOMES (CSO 1.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA143010	McLaughlin-Drubin, Margaret	Epigenetic Reprogramming by the Human Papillomavirus E7 Oncoprotein
2.	R01	CA142983*	Hoyo, Cathrine	Disparities in Cervical Cancer Precursors and Deregulation of Imprinted Genes
3.	R01	CA142983	Hoyo, Cathrine	Disparities in Cervical Cancer Precursors and Deregulation of Imprinted Genes
4.	R01	CA140964	Liang, Chengyu	Role of UVRAG-Mediated Autophagy in Tumor Suppression
5.	R01	CA078391*	Lu-Chang, A-Lien	Repair of Oxidatively Damaged Guanines
6.	R01	CA078391	Lu-Chang, A-Lien	Repair of Oxidatively Damaged Guanines
7.	R01	CA066980	Munger, Karl	Biological Activity of HPV E7 in Human Epithelial Cells
8.	R01	CA154320	Pandita, Tej	Tumor-Cell-Specific Targets for Combined Hyperthermia and Radiation Effects
9.	R01	CA129682	Wang, Hong-Gang	Regulation of Autophagy and Tumorigenesis by Bif-1
10.	R01	CA148768	You, Jianxin	Chromatin Structure Maintenance and Cancer

CANCER INITIATION: ONCOGENES AND TUMOR SUPPRESSOR GENES (CSO 1.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA143010	McLaughlin-Drubin, Margaret	Epigenetic Reprogramming by the Human Papillomavirus E7 Oncoprotein
2.	P01	CA050661	Livingston, David	Papova Virus Transforming Mechanisms
3.	P01	CA022443	Sugden, William	Molecular Biology and Genetics of Human Tumor Viruses
4.	R01	CA119134	Chen, Jason	Induction of Genomic Instability by HPV E6 and E7

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Biology: Cancer initiation: Oncogenes and tumor suppressor genes (CSO 1.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
5.	R01	CA124760	Chiang, Cheng-Ming	Regulation of p53 Transcription by Viral Oncoproteins & Covalent Modifications
6.	R01	CA064795	Galloway, Denise	Interactions of HPV Oncogenes with the p53 Pathway
7.	R01	CA154358	Kurita, Takeshi	Molecular Etiology of Cervicovaginal Adenosis by In Utero Hormone Exposure
8.	R01	CA134737	Vande Pol, Scott	Papillomavirus E6 Structural Consortium
9.	R01	CA129682	Wang, Hong-Gang	Regulation of Autophagy and Tumorigenesis by Bif-1
10.	ZIA	BC 01081	Niederhuber, John	Role of Normal Cervical Stem Cells in HPV Induced Initiation of Cervical Cancer
11.	ZIA	SC 01035	Zheng, Zhi-Ming	Gene Expression and Post-Transcriptional Regulation of DNA Tumor Viruses

CANCER PROGRESSION AND METASTASIS (CSO 1.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA078810	Altieri, Dario	Control of Apoptosis in Cancer by Survivin
2.	R01	CA040355	Dewhirst, Mark	Heat and Radiation Effects on Tumor Microcirculation
3.	ZIA	BC 01079	Carrington, Mary	Effects of Genetic Polymorphism in MHC, KIR, and Related Loci on Human Disease

RESOURCES AND INFRASTRUCTURE (CSO 1.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	U24	CA114793	DiSaia, Philip	Gynecologic Oncology Group Specimen Banking

CANCER-RELATED BIOLOGY (CSO 1.6)¹

No.	Mech	Project #	Principal Investigator	Project Title
1.	ZIA	CP010210	Hildesheim, Allan	ALTS Immunology Study to Predict Cervical Disease Progression

¹ CSO 1.6 is a historical code for general biology projects that is no longer applied to new projects.

ETIOLOGY (CSO 2)**EXOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.1)**

No.	Mech	Project #	Principal Investigator	Project Title
1.	F32	CA162707	Wiczer, Brian	The Role of Class III PI-3 Kinase in mTOR Complex1 Signaling and Tumorigenesis
2.	P01	CA016038*	Dimaio, Daniel	Molecular Basis of Viral and Cellular Transformation
3.	P01	CA016038	Dimaio, Daniel	Molecular Basis of Viral and Cellular Transformation
4.	P01	CA022443	Sugden, William	Molecular Biology and Genetics of Human Tumor Viruses
5.	R01	CA107394	Androphy, Elliot	Functions of Papillomavirus E6
6.	R01	CA119904	Androphy, Elliot	Small Molecule Inhibitors of Oncogenic Human Papillomavirus
7.	R01	CA058376	Androphy, Elliot	Control of Papillomavirus Expression and Transformation
8.	R01	CA119134	Chen, Jason	Induction of Genomic Instability by HPV E6 and E7
9.	R01	CA124760	Chiang, Cheng-Ming	Regulation of p53 Transcription by Viral Oncoproteins & Covalent Modifications
10.	R01	CA083679	Chow, Louise	Mechanisms of Human Papillomavirus DNA Replication
11.	R01	CA047622	Christensen, Neil	Papillomavirus Host Interaction
12.	R01	CA037157	Dimaio, Daniel	Cell Transformation by Bovine Papillomavirus
13.	R01	CA037667	Garcea, Robert	Mechanisms in Polyoma and Papillomavirus Assembly
14.	R01	CA123467	Gravitt, Patti	HPV Infection Among Perimenopausal Women in the 1945-64 Birth Cohort
15.	R01	CA121979	Hagensee, Michael	Interaction of EBV and HPV in the Development of Cervical Dysplasia in HIV+ Women
16.	R01	CA074397	Kast, Wijbe	HPV Vlp and Antigen Presenting Cells
17.	R01	CA154358	Kurita, Takeshi	Molecular Etiology of Cervicovaginal Adenosis by In Utero Hormone Exposure
18.	R01	CA142861	Laimins, Laimonis	HPV and the DNA Damage Response
19.	R01	CA059655	Laimins, Laimonis	Regulation of Human Papillomavirus Gene Expression
20.	R01	CA098428	Lambert, Paul	Functional Analysis of the HPV-16 E6 and E7 Oncogenes
21.	R01	CA066980	Munger, Karl	Biological Activity of HPV E7 in Human Epithelial Cells

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Etiology: Exogenous factors in the origin and cause of cancer (CSO 2.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
22.	R01	CA081135	Munger, Karl	Modulation of Host Cell Apoptotic Responses by HPV E7
23.	R01	CA132136	Ozbun, Michelle	Entry of Oncogenic HPVs Into Human Keratinocytes
24.	R01	CA118790	Roden, Richard	Mechanisms of Papillomavirus Neutralization
25.	R01	CA102357	Wells, Susanne	Fanconi Anemia and HPV Transformation
26.	R01	CA133569*	Xi, Long Fu	Intratypic Variation of Oncogenic HPV Types as a Risk Factor for Cervical Neoplasia
27.	R01	CA133569	Xi, Long Fu	Intratypic Variation of Oncogenic HPV Types as a Risk Factor for Cervical Neoplasia
28.	R01	CA148768	You, Jianxin	Chromatin Structure Maintenance and Cancer
29.	R01	CA142723*	You, Jianxin	Mechanism of Brd4-Mediated Papillomavirus Host Interactions
30.	R01	CA142723	You, Jianxin	Mechanism of Brd4-Mediated Papillomavirus Host Interactions
31.	R13	CA132461	Pirisi-Creek, Lucia	International Papillomavirus Conferences 2007-12
32.	R21	CA156537	Gravitt, Patti	HPV Persistence: An Overlooked Consequence of Helminth Infection?
33.	R21	CA153096	Meneses, Patricio	Initial Process of HPV BINDING and Entry
34.	R37	CA013202	Harrison, Stephen	Structure and Assembly of Viruses
35.	R37	CA074202	Laimins, Laimonis	Life Cycle of Human Papillomaviruses
36.	R37	CA051323	Moscicki, Anna-Barbara	Natural History of HPV Infection to Neoplasia
37.	U01	CA141583	Lambert, Paul	Novel Interventions Against HPV-Associated Neoplasia
38.	ZIA	BC 01090	Buck, Chris	Papillomavirus Infectious Entry
39.	ZIA	CP010206	Gage, Julia	HPV Testing to Improve Cervical Cancer Screening in the Mississippi Delta
40.	ZIA	CP010210	Hildesheim, Allan	Cervical Cancer (Adenocarcinoma) Multi-Center Study in the U.S.
41.	ZIA	CP010188	Katki, Hormuzd	Cancer Risk Calculator
42.	ZIA	BC 01057	Lowy, Douglas	Papillomavirus Virion Proteins and Vaccines
43.	ZIA	BC 01081	Niederhuber, John	Role of Normal Cervical Stem Cells in HPV Induced Initiation of Cervical Cancer
44.	ZIA	CP010206	Schiffman, Mark	HPV Cervical Cancer Risk Prediction
45.	ZIA	CP010206	Schiffman, Mark	HPV DNA Prevalence in Rural Nigeria
46.	ZIA	CP010206	Schiffman, Mark	HPV Guanacaste Study – Infection and Cervical Neoplasia in a High-Risk Area
47.	ZIA	CP010206	Schiffman, Mark	HPV Viral Genomics
48.	ZIA	CP010206	Schiffman, Mark	Study of HPV Infection and Cervical Dysplasia in Portland
49.	ZIA	BC 00905	Schiller, John	Papillomavirus Virion Proteins and Vaccines

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Etiology: Exogenous factors in the origin and cause of cancer (CSO 2.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
50.	ZIA	CP010124	Wentzensen, Nicolas	ALTS
51.	ZIA	SC 01035	Zheng, Zhi-Ming	Gene Expression and Post-Transcriptional Regulation of DNA Tumor Viruses

ENDOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F32	CA162707	Wiczer, Brian	The Role of Class III Pi-3 Kinase in mTOR Complex1 Signaling and Tumorigenesis
2.	K08	CA131171	Katzenellenbogen, Rachel	Regulation of Telomerase by NFX1
3.	R01	CA125069	Fang, Carolyn	Effects of Mindfulness-Based Stress Reduction (MBSR) on Immune Response to HPV
4.	R01	CA120847	Lambert, Paul	Role of Estrogen in Cervical Cancer
5.	R01	CA140964	Liang, Chengyu	Role of UVRAG-Mediated Autophagy in Tumor Suppression
6.	R21	CA153139	Spiryda, Lisa	Understanding Health Disparities in Cervical Dysplasia and Cancer Through the Identification of Novel Biomarkers, SIX1 and EGFR
7.	ZIA	CP010210	Hildesheim, Allan	ALTS Immunology Study to Predict Cervical Disease Progression
8.	ZIA	CP010210	Hildesheim, Allan	Cervical Cancer (Adenocarcinoma) Multi-Center Study in the U.S.
9.	ZIA	CP010217	Hildesheim, Allan	Costa Rica HPV Vaccine Study
10.	ZIA	CP010215	Safaeian, Mahboobeh	Evaluation of Skin, Colonic Vaginal, Penile and Oral Microbiome and Effect of Time and Organism Diversity at Each Site
11.	ZIA	CP010206	Schiffman, Mark	HPV Cervical Cancer Risk Prediction
12.	ZIA	CP010206	Schiffman, Mark	HPV Viral Genomics

INTERACTIONS OF GENES AND/OR GENETIC POLYMORPHISMS WITH EXOGENOUS AND/OR ENDOGENOUS FACTORS (CSO 2.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	R01	CA058376	Androphy, Elliot	Control of Papillomavirus Expression and Transformation
3.	R01	CA120843	Antony, Asok	Nutritional Regulation of hnRNP-E1 and Related Genes
4.	R01	CA037157	Dimaio, Daniel	Cell Transformation by Bovine Papillomavirus
5.	R21	CA153139	Spiryda, Lisa	Understanding Health Disparities in Cervical Dysplasia and Cancer Through the Identification of Novel Biomarkers, SIX1 and EGFR

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Cervical Cancer

Etiology: Interactions of genes and/or genetic polymorphisms with exogenous and/or endogenous factors (CSO 2.3),
cont.

No.	Mech	Project #	Principal Investigator	Project Title
6.	R37	CA074202	Laimins, Laimonis	Life Cycle of Human Papillomaviruses
7.	U01	CA078527	Burk, Robert	Persistent HPV in Women at Risk for Cervix Cancer
8.	ZIA	BC 01090	Buck, Chris	Papillomavirus Infectious Entry
9.	ZIA	BC 01079	Carrington, Mary	Effects of Genetic Polymorphism in MHC, KIR, and Related Loci on Human Disease
10.	ZIA	CP010206	Schiffman, Mark	HPV Methylation
11.	ZIA	CP010124	Wentzensen, Nicolas	SUCCEED (Study to Understand Cervical Cancer Early Endpoints and Determinants)

RESOURCES AND INFRASTRUCTURE RELATED TO ETIOLOGY (CSO 2.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	R00	CA137160	Moody, Cary	The Role of Caspase Activation in the Differentiation-Dependent Life Cycle of HPV
3.	R01	CA121979	Hagensee, Michael	Interaction of EBV and HPV in the Development of Cervical Dysplasia in HIV+ Women
4.	R01	CA085178	Strickler, Howard	HPV & Cervix Neoplasia in a Large, Long Term HIV + Cohort
5.	ZIA	CP010206	Schiffman, Mark	Cervical Visualization Study
6.	ZIA	CP010206	Schiffman, Mark	HPV Methylation

PREVENTION (CSO 3)

INTERVENTIONS TO PREVENT CANCER: PERSONAL BEHAVIORS THAT AFFECT CANCER RISK (CSO 3.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	R01	CA125069	Fang, Carolyn	Effects of Mindfulness-Based Stress Reduction (MBSR) on Immune Response to HPV
3.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
4.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
5.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Prevention: Interventions to prevent cancer: Personal behaviors that affect cancer risk (CSO 3.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
6.	U54	CA153499	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
7.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
8.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
9.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
10.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
11.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
12.	U54	CA153708	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
13.	U54	CA153461*	Hebert, James	South Carolina Cancer Disparities Community Network – II
14.	U54	CA153461	Hebert, James	South Carolina Cancer Disparities Community Network – II
15.	ZIA	CP010217	Hildesheim, Allan	HPV Vaccine Trial Validation

NUTRITIONAL SCIENCE IN CANCER PREVENTION (CSO 3.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	U54	CA153461*	Hebert, James	South Carolina Cancer Disparities Community Network – II
2.	U54	CA153461	Hebert, James	South Carolina Cancer Disparities Community Network – II

CHEMOPREVENTION (CSO 3.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA148966	Einstein, Mark	Expanded Phase II Trial of Carraguard for Prevention of HPV Infection
2.	R21	CA156537	Gravitt, Patti	HPV Persistence: An Overlooked Consequence of Helminth Infection?
3.	R21	CA159908	Taylor, Victoria	HPV Vaccination in the Cambodian Community

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**Cervical Cancer
Prevention (CSO 3), cont.**

VACCINES (CSO 3.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	N01	CP011005-018	Herrero, Rolando	HPV Type 16 Vaccine Trial in Costa Rica
2.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
3.	P50	CA098252*	Wu, T.-C.	SPORE in Cervical Cancer
4.	P50	CA098252	Wu, T.-C.	SPORE in Cervical Cancer
5.	R01	CA143130	Nakagawa, Mayumi	Understanding and Enhancing T-Cell Responses to High Risk Human Papillomaviruses
6.	R01	CA136847	Sepkovic, Daniel	Diindolylmethane Enhances the Efficacy of Preventive Vaccines in an HPV Transgenic Mouse Model
7.	R21	CA152078	Lee, Haeok	Vaccine-Preventable Cancer Behavior Measurement Among Southeast Asian Americans
8.	R21	CA159908	Taylor, Victoria	HPV Vaccination in the Cambodian Community
9.	R43	CA154078	Hillebrand, Annette	Development of an L2-Based HPV Vaccine to Generate Broad Immunity
10.	U01	CA078527	Burk, Robert	Persistent HPV in Women at Risk for Cervix Cancer
11.	ZIA	CP010217	Hildesheim, Allan	Costa Rica HPV Vaccine Study
12.	ZIA	CP010217	Hildesheim, Allan	HPV - General Lab
13.	ZIA	CP010217	Hildesheim, Allan	HPV Vaccine Trial Validation
14.	ZIA	BC 01075	Khleif, Samir	Clinical Trial Development in Cancer Vaccines
15.	ZIA	BC 01075	Khleif, Samir	Enhancing Immune Response Strategies
16.	ZIA	BC 01057	Lowy, Douglas	Papillomavirus Virion Proteins and Vaccines
17.	ZIA	CP010216	Safaeian, Mahboobeh	HPV Immunology Studies
18.	ZIA	BC 00905	Schiller, John	Papillomavirus Virion Proteins and Vaccines

COMPLEMENTARY AND ALTERNATIVE PREVENTION APPROACHES (CSO 3.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	ZIA	CP010206	Gage, Julia	HPV Testing to Improve Cervical Cancer Screening in the Mississippi Delta

Gynecologic Cancers Portfolio Analysis

**Cervical Cancer
Prevention (CSO 3), cont.**

RESOURCES AND INFRASTRUCTURE RELATED TO PREVENTION (CSO 3.6)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	R01	CA157469	Kiviat, Nancy	Cytology vs At Home HPV Screening for Detection of CIN 2,3, CIS
3.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
4.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
5.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
6.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
7.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
8.	U54	CA153708	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
9.	ZIA	CP010206	Schiffman, Mark	Cervical Visualization Study

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS (CSO 4)

TECHNOLOGY DEVELOPMENT AND/OR MARKER DISCOVERY (CSO 4.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K07	CA120040	Patel, Divya	Mass Spectroscopy-Based HPV Detection in Cervical Cancer Screening
2.	P01	CA082710	Follen, Michele	Optical Technologies and Molecular Imaging for Cervical Neoplasia
3.	R01	CA125618*	Chi, Jen-Tsan	Gene Expression Programs of Lactic Acidosis in Human Cancers
4.	R01	CA125618	Chi, Jen-Tsan	Gene Expression Programs of Lactic Acidosis in Human Cancers
5.	R01	CA071898	Mourant, Judith	Light Scattering and Normal Tissue Models
6.	R21	CA156166	Ferris, Daron	Clinical Evaluation of Polarized Light Assisted Colposcopy
7.	R21	CA139179	Rakowski, William	Classification Tree Analysis to Enhance Targeting for Cancer Screening Programs
8.	R21	CA150033	Yemelyanova, Anna	Viral Protein Expression as Biomarkers in HPV-Related Cervical Cancer Precursors
9.	R33	CA140084	Robinson, Joseph	Specific Detection of Cervical Cancers Using Cytometry-Based Molecular Diagnostic

Cervical Cancer

Early Detection, Diagnosis, and Prognosis: Technology development and/or marker discovery (CSO 4.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
10.	R44	CA110149	Bambot, Shabbir	Economic Spectroscopic Evaluation of Cervical Cancer
11.	ZIA	BC 01083	Ried, Thomas	Identifying Diagnostic Markers for Cervical, Breast, and Prostate Cancer
12.	ZIA	CP010206	Schiffman, Mark	The HPV Persistence and Progression Cohort (Pap Cohort)
13.	ZIA	CP010124	Wentzensen, Nicolas	Biopsy Study
14.	ZIA	CP010124	Wentzensen, Nicolas	SUCCEED (Study to Understand Cervical Cancer Early Endpoints and Determinants)

TECHNOLOGY AND/OR MARKER EVALUATION WITH RESPECT TO FUNDAMENTAL PARAMETERS OF METHOD (CSO 4.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA071898	Mourant, Judith	Light Scattering and Normal Tissue Models
2.	R21	CA162747	Ramanujam, Nirmala	Smart Optical Sensor for Detection of Cervical Cancer in the Developing World

TECHNOLOGY AND/OR MARKER TESTING IN A CLINICAL SETTING (CSO 4.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P01	CA082710	Follen, Michele	Optical Technologies and Molecular Imaging for Cervical Neoplasia
2.	P50	CA098252*	Wu, T.-C.	SPORE in Cervical Cancer
3.	P50	CA098252	Wu, T.-C.	SPORE in Cervical Cancer
4.	R01	CA095405	Mahadevan-Jansen, Anita	Diagnosis of Cervical Precancers Using Raman Spectroscopy
5.	R01	CA074801	Shastri, Surendra	Early Detection of Common Cancers in Women in India
6.	R21	CA156166	Ferris, Daron	Clinical Evaluation of Polarized Light Assisted Colposcopy
7.	R21	CA162718	Mell, Loren	Image-Guided Bone Marrow-Sparing IMRT for Cervical Cancer
8.	R21	CA162747	Ramanujam, Nirmala	Smart Optical Sensor for Detection of Cervical Cancer in the Developing World
9.	R21	CA156032	Tewari, Krishnansu	Novel Biologic Markers of Treatment Resistance in Locally Advanced Cervical Carcinoma
10.	U01	CA084955	Marks, Jeffrey	Atlantic Breast and Gynecologic Clinical Validation Center
11.	ZIA	CP010188	Katki, Hormuzd	Cancer Risk Calculator
12.	ZIA	BC 01083	Ried, Thomas	Identifying Diagnostic Markers for Cervical, Breast, and Prostate Cancer

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Early Detection, Diagnosis, and Prognosis: Technology and/or marker testing in a clinical setting (CSO 4.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
13.	ZIA	CP010206	Schiffman, Mark	HPV DNA Prevalence in Rural Nigeria
14.	ZIA	CP010206	Schiffman, Mark	HPV Guanacaste Study – Infection and Cervical Neoplasia in a High-Risk Area
15.	ZIA	CP010206	Schiffman, Mark	Study of HPV Infection and Cervical Dysplasia in Portland
16.	ZIA	CP010124	Wentzensen, Nicolas	Biopsy Study

RESOURCES AND INFRASTRUCTURE RELATED TO DETECTION, DIAGNOSIS, OR PROGNOSIS (CSO 4.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P01	CA082710	Follen, Michele	Optical Technologies and Molecular Imaging for Cervical Neoplasia
2.	R01	CA136931	Grigsby, Perry	Intra-Tumoral Metabolic Heterogeneity of Cervical Cancer
3.	R01	CA129060	Han, Hae-Ra	Better Breast and Cervical Cancer Control for Korean American Women
4.	U01	CA163304	Feng, Ziding	PROSPR Statistical Coordinating Center (PSCC)
5.	U54	CA153705	Carrasquillo, Olveen	South Florida Center for Reducing Cancer Disparities
6.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
7.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
8.	U54	CA153499*	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
9.	U54	CA153499	Chen, Moon	AANCART: The National Center for Reducing Asian American Cancer Health Disparities
10.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
11.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
12.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
13.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
14.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
15.	U54	CA153708	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
16.	U54	CA153719*	Partridge, Edward	Deep South Network for Cancer Control
17.	U54	CA153719	Partridge, Edward	Deep South Network for Cancer Control

Cervical Cancer

Early Detection, Diagnosis, and Prognosis: Resources and infrastructure (CSO 4.4), cont.

No.	Mech	Project #	Principal Investigator	Project Title
18.	U54	CA153502	Thompson, Beti	Center for Hispanic Health Promotion: Reducing Cancer Disparities
19.	ZIA	CP010217	Hildesheim, Allan	HPV – General Lab
20.	ZIA	CP010215	Safaeian, Mahboobeh	Evaluation of Skin, Colonic Vaginal, Penile and Oral Microbiome and Effect of Time and Organism Diversity at Each Site
21.	ZIA	CP010206	Schiffman, Mark	The HPV Persistence and Progression Cohort (PaP Cohort)
22.	ZIA	CP010124	Wentzensen, Nicolas	ALTS

TREATMENT (CSO 5)

LOCALIZED THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P01	CA116602	Williamson, Jeffrey	Image-Guided Adaptive Radiotherapy
2.	R01	CA136931	Grigsby, Perry	Intra-Tumoral Metabolic Heterogeneity of Cervical Cancer
3.	R01	CA074397	Kast, Wijbe	HPV VLP and Antigen Presenting Cells
4.	R01	CA154320	Pandita, Tej	Tumor-Cell-Specific Targets for Combined Hyperthermia and Radiation Effects

LOCALIZED THERAPIES: CLINICAL APPLICATIONS (CSO 5.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R21	CA162718	Mell, Loren	Image-Guided Bone Marrow-Sparing IMRT for Cervical Cancer

SYSTEMIC THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA119904	Androphy, Elliot	Small Molecule Inhibitors of Oncogenic Human Papillomavirus
2.	R01	CA109821	Chambers, Timothy	Bcl-2 Proteins in Mechanism of Anti-Mitotic Drug Action
3.	R01	CA129421	Huang, Leaf	Interaction of Cationic Lipids with Dendritic Cells
4.	R01	CA143130	Nakagawa, Mayumi	Understanding and Enhancing T-Cell Responses to High Risk Human Papillomaviruses

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Cervical Cancer

Treatment: Systemic therapies: Discovery and development (CSO 5.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
5.	R01	CA118790	Roden, Richard	Mechanisms of Papillomavirus Neutralization
6.	R01	CA136847	Sepkovic, Daniel	Diindolylmethane Enhances the Efficacy of Preventive Vaccines in an HPV Transgenic Mouse Model
7.	R01	CA142691	Trimble, Cornelia	Mechanisms of Mucosal Immune Evasion in High Grade Cervical Dysplasia
8.	R43	CA154078	Hillebrand, Annette	Development of an L2-Based HPV Vaccine to Generate Broad Immunity
9.	ZIA	BC 01075	Khleif, Samir	Enhancing Immune Response Strategies

SYSTEMIC THERAPIES: CLINICAL APPLICATIONS (CSO 5.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA098252*	Wu, T.-C.	SPORE in Cervical Cancer
2.	P50	CA098252	Wu, T.-C.	SPORE in Cervical Cancer
3.	R01	CA142422	Fitzgerald, Daniel	Natural History and Pathogenesis of HPV/HIV Co-Infection in Haiti
4.	ZIA	BC 01075	Khleif, Samir	Clinical Trial Development in Cancer Vaccines

COMBINATIONS OF LOCALIZED AND SYSTEMIC THERAPIES (CSO 5.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R21	CA156032	Tewari, Krishnansu	Novel Biologic Markers of Treatment Resistance in Locally Advanced Cervical Carcinoma

COMPLEMENTARY AND ALTERNATIVE TREATMENT APPROACHES (CSO 5.6)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO TREATMENT AND THE PREVENTION OF RECURRENCE (CSO 5.7)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
2.	R21	CA167652	Palefsky, Joel	Incidence of HIV Among Indian Men Who Have Sex with Men

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6)**PATIENT CARE AND SURVIVORSHIP ISSUES (CSO 6.1)**

No.	Mech	Project #	Principal Investigator	Project TITLE
1.	K01	CA154938	Ceballos, Rachel	Addressing Psychosocial Disparities in Rural Hispanic Cancer Survivors
2.	R01	CA162139	Barakat, Richard	The Lymphedema and Gynecologic Cancer (LEG) Study: Incidence, Risk Factors, and Impact
3.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors
4.	R01	CA127971	Sheffield-Moore, Melinda	Nutrition and Anabolic Interventions in Cancer Cachexia
5.	R01	CA118136*	Wenzel, Lari	Stress, Immunity & Cervical Cancer: Biobehavioral Outcomes of a Randomized Trial
6.	R01	CA118136	Wenzel, Lari	Stress, Immunity & Cervical Cancer: Biobehavioral Outcomes of a Randomized Trial
7.	U54	CA153502	Thompson, Beti	Center for Hispanic Health Promotion: Reducing Cancer Disparities

SURVEILLANCE (CSO 6.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA162139	Barakat, Richard	The Lymphedema and Gynecologic Cancer (LEG) Study: Incidence, Risk Factors, and Impact
2.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors
3.	R01	CA123467	Gravitt, Patti	HPV Infection Among Perimenopausal Women in the 1945-64 Birth Cohort
4.	U54	CA132381*	Thompson, Beti	Partnership for the Advancement of Cancer Research: NMSU-FHCRC (2 of 2)
5.	U54	CA132381	Thompson, Beti	Partnership for the Advancement of Cancer Research: NMSU-FHCRC (2 of 2)
6.	U54	CA164336	Wheeler, Cosette	New Mexico HPV Outcomes, Practice Effectiveness and Surveillance (NM-HOPES)

Gynecologic Cancers Portfolio Analysis

Cervical Cancer
Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

BEHAVIOR (CSO 6.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA132960	Mosavel, Maghboeba	Promoting Cancer Screening for Mothers Using a Daughter-Initiated Approach
2.	K07	CA134635	Documet, Patricia	A Collectivist Approach to Cervical Cancer Screening Among Latinos
3.	P20	CA165592	Cella, David	NU: NEIGHBORS: A Social Science Partnership to Reduce Cancer Disparities (2 of 2)
4.	P20	CA165588	Stuart, Moira	NU: NEIGHBORS: A Social Science Partnership to Reduce Cancer Disparities (1 of 2)
5.	R01	CA126620	Buchwald, Dedra	Randomized Trial of Workplace Interventions to Improve Health of Alaska Natives
6.	R01	CA120606	Dignan, Mark	Patient Navigation for Cervical Cancer in Appalachia
7.	R01	CA126596	Emmons, Karen	A Sustainable Approach to Increasing Cancer Screening in Community Health Centers
8.	R01	CA155326	Murphy, Sheila	Barriers to Cervical Cancer Prevention in Hispanic Women: A Multilevel Approach
9.	R01	CA149324	Tanjasiri, Sora	A Pap Test Intervention to Enhance Decision Making Among Pacific Islander Women
10.	R01	CA118136*	Wenzel, Lari	Stress, Immunity & Cervical Cancer: Biobehavioral Outcomes of a Randomized Trial
11.	R01	CA118136	Wenzel, Lari	Stress, Immunity & Cervical Cancer: Biobehavioral Outcomes of a Randomized Trial
12.	R03	CA150570	Nan, Xiaoli	Message Framing and HPV Vaccination Acceptance among African Americans
13.	R21	CA152803	Katz, Mira	Team Activation to Increase HPV Vaccination Rates
14.	R21	CA148658	Kobetz, Erin	Patnè en Aksyon: Addressing Cervical Cancer Disparities in Little Haiti
15.	R21	CA155531	Lee, Hee	Mobile Phone Text Messaging Intervention for Cervical Cancer Screening
16.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
17.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
18.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
19.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
20.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Cancer Control, Survivorship, and Outcomes Research: Behavior (CSO 6.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
21.	U54	CA153708	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
22.	U54	CA153719*	Partridge, Edward	Deep South Network for Cancer Control
23.	U54	CA153719	Partridge, Edward	Deep South Network for Cancer Control

COST ANALYSIS AND HEALTH CARE DELIVERY (CSO 6.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	D43	CA153793	Anastos, Kathryn	Developing Rwandan Research Capacity in Cervical Cancer and Other AIDS Malignancies
2.	P01	CA082710	Follen, Michele	Optical Technologies and Molecular Imaging for Cervical Neoplasia
3.	P50	CA105632	Paskett, Electra	Reducing Cervical Cancer in Appalachia
4.	U54	CA153705	Carrasquillo, Olveen	South Florida Center for Reducing Cancer Disparities

EDUCATION AND COMMUNICATION (CSO 6.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	D43	CA153793	Anastos, Kathryn	Developing Rwandan Research Capacity in Cervical Cancer and Other AIDS Malignancies
2.	D43	CA153715	Neugut, Alfred	Columbia-South Africa Training Program for Research on HIV-Associated Malignancies
3.	D43	CA153784	Parham, Groesbeck	Zambian Cervical Cancer Research Capacity Initiative
4.	K01	CA155417	Wallington, Sherrie	An HPV Health Communication Randomized Controlled Trial Intervention
5.	P20	CA165592	Cella, David	NU: NEIGHBORS: A Social Science Partnership to Reduce Cancer Disparities (2 of 2)
6.	P20	CA165588	Stuart, Moira	NU: NEIGHBORS: A Social Science Partnership to Reduce Cancer Disparities (1 of 2)
7.	R01	CA126620	Buchwald, Dedra	Randomized Trial of Workplace Interventions to Improve Health of Alaska Natives
8.	R01	CA120606	Dignan, Mark	Patient Navigation for Cervical Cancer in Appalachia
9.	R01	CA144052	Murphy, Sheila	Transforming Cancer Knowledge, Attitudes and Behavior through Narrative
10.	R01	CA155326	Murphy, Sheila	Barriers to Cervical Cancer Prevention in Hispanic Women: A Multilevel Approach
11.	R01	CA149324	Tanjasiri, Sora	A Pap Test Intervention to Enhance Decision Making Among Pacific Islander Women
12.	R03	CA162869	Ramaswamy, Megha	Understanding the Cervical Cancer Health Gap for Women in Jail

Gynecologic Cancers Portfolio Analysis

Cervical Cancer

Cancer Control, Survivorship, and Outcomes Research: Education and communication (CSO 6.5), cont.

No.	Mech	Project #	Principal Investigator	Project Title
13.	R13	CA159848	Brenner, Dean	Translating Cancer Prevention Research in the Developing World
14.	R13	CA132461	Pirisi-Creek, Lucia	International Papillomavirus Conferences 2007-12
15.	R21	CA152803	Katz, Mira	Team Activation to Increase HPV Vaccination Rates
16.	R21	CA148658	Kobetz, Erin	Patnè en Aksyon: Addressing Cervical Cancer Disparities in Little Haiti
17.	R21	CA155531	Lee, Hee	Mobile Phone Text Messaging Intervention for Cervical Cancer Screening
18.	T32	CA009515	Appelbaum, Frederick	Training in Cancer Biology and Transplantation
19.	T32	CA101642	Bodurka, Diane	Training of Academic Gynecologic Oncologists
20.	T32	CA060396	DiSaia, Philip	Gynecologic Oncology Fellowship Program
21.	U54	CA153705	Carrasquillo, Olveen	South Florida Center for Reducing Cancer Disparities
22.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
23.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
24.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
25.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
26.	U54	CA153708*	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
27.	U54	CA153708	Hargreaves, Margaret	Meharry Medical College-CHC Community Networks Program Center
28.	U54	CA153461*	Hebert, James	South Carolina Cancer Disparities Community Network – II
29.	U54	CA153461	Hebert, James	South Carolina Cancer Disparities Community Network – II
30.	U54	CA153719*	Partridge, Edward	Deep South Network for Cancer Control
31.	U54	CA153719	Partridge, Edward	Deep South Network for Cancer Control
32.	U54	CA132381*	Thompson, Beti	Partnership for the Advancement of Cancer Research: NMSU-FHCRC (2 of 2)
33.	U54	CA132381	Thompson, Beti	Partnership for the Advancement of Cancer Research: NMSU-FHCRC (2 of 2)

END-OF-LIFE CARE (CSO 6.6)

No projects.

Cervical Cancer
Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

ETHICS AND CONFIDENTIALITY IN CANCER RESEARCH (CSO 6.7)

No.	Mech	Project #	Principal Investigator	Project Title
1.	U54	CA153719*	Partridge, Edward	Deep South Network for Cancer Control
2.	U54	CA153719	Partridge, Edward	Deep South Network for Cancer Control

COMPLEMENTARY AND ALTERNATIVE APPROACHES FOR SUPPORTIVE CARE OF PATIENTS AND SURVIVORS (CSO 6.8)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA127971	Sheffield-Moore, Melinda	Nutrition and Anabolic Interventions in Cancer Cachexia

RESOURCES AND INFRASTRUCTURE RELATED TO CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6.9)

No.	Mech	Project #	Principal Investigator	Project Title
1.	U54	CA153705	Carrasquillo, Olveen	South Florida Center for Reducing Cancer Disparities
2.	U54	CA153719*	Partridge, Edward	Deep South Network for Cancer Control
3.	U54	CA153719	Partridge, Edward	Deep South Network for Cancer Control
4.	U54	CA153502	Thompson, Beti	Center for Hispanic Health Promotion: Reducing Cancer Disparities

SCIENTIFIC MODEL SYSTEMS (CSO 7)

DEVELOPMENT AND CHARACTERIZATION OF MODEL SYSTEMS (CSO 7.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K22	CA151918	Lopez, Carlos	Studies of Receptor Mediated Signal Transduction Processes in Mammalian Cancer Biology
2.	P01	CA082710	Follen, Michele	Optical Technologies and Molecular Imaging for Cervical Neoplasia
3.	R01	CA152667	Kodell, Ralph	Individualizing Cancer Predictions via Selective Voting in Convex-Hull Ensembles

APPLICATION OF MODEL SYSTEMS (CSO 7.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K22	CA151918	Lopez, Carlos	Studies of Receptor Mediated Signal Transduction Processes in Mammalian Cancer Biology
2.	R01	CA152667	Kodell, Ralph	Individualizing Cancer Predictions via Selective Voting in Convex-Hull Ensembles
3.	R01	CA120847	Lambert, Paul	Role of Estrogen in Cervical Cancer
4.	U01	CA141583	Lambert, Paul	Novel Interventions Against HPV-Associated Neoplasia

RESOURCES AND INFRASTRUCTURE RELATED TO SCIENTIFIC MODEL SYSTEMS (CSO 7.3)

No projects.

OVARIAN CANCER PROJECTS**BIOLOGY (CSO 1)****NORMAL FUNCTIONING (CSO 1.1)**

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA095319	Peter, Marcus	Novel Fas/CD95 Signaling Mechanisms
2.	R33	CA110499	Lancaster, Johnathan	Molecular Profiling to Predict Response to Chemotherapy
3.	ZIA	BC 01097	Lipkowitz, Stanley	Cbl Proteins as Regulators of Tyrosine Kinase Signaling

CANCER INITIATION: ALTERATIONS IN CHROMOSOMES (CSO 1.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F31	CA144083	Schramm, Danielle	Defining Double-Stranded RNA Receptor Induced Apoptosis in Ovarian Cancer
2.	K07	CA131094	Perrin, Mary	Epigenetics and Female Reproductive Cancers
3.	R01	CA138835	Greenberg, Roger	The RAP80-BRCC36 Deubiquitinating Complex in DNA Repair

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Biology: Cancer initiation: Alterations in chromosomes (CSO 1.2), cont.

No.	Mech	Project #	Principal Investigator	Project Title
4.	R01	CA123219	Mills, Gordon	The Role of Aberrant Splicing of EVI1 in Ovarian Cancer Pathophysiology
5.	R01	CA085289	Nephew, Kenneth	DNA Methylation and Ovarian Cancer
6.	R01	CA149429	Phelan, Catherine	The Mitochondrial Genome and Ovarian Cancer Risk
7.	R01	CA125636	Taniguchi, Toshiyasu	The Fanconi Anemia-BRCA Pathway and Chemosensitivity of Human Cancer
8.	R01	CA132755	Yu, Xiaochun	Molecular Mechanisms of BRCA1-Dependent DNA Damage Response and Tumorigenesis
9.	R01	CA142776	Zhang, Lin	The Role of MicroRNA, Mir-30d, in the Initiation and Progression of Cancer
10.	R37	CA057138	Eisenman, Robert	Myc Oncoprotein Function
11.	R37	CA088480	Giaccia, Amato	Hypoxia and Gene Repression
12.	U54	CA113001	Huang, Tim	Interrogating Epigenetic Changes in Cancer Genomes

CANCER INITIATION: ONCOGENES AND TUMOR SUPPRESSOR GENES (CSO 1.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F32	CA159523	Kim, Jaeyeon	Understanding the Origin and Pathogenesis of Epithelial Ovarian Cancer
2.	K08	CA151892	Simpkins, Fiona	Targeting Src Signaling Pathways to Promote Cell Cycle Arrest in Ovarian Cancer
3.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
4.	R01	CA135354	Bast, Robert	ARHI (DIRAS 3) in Autophagy and Dormancy of Ovarian Cancer
5.	R01	CA137041	Cheng, Jin	Micrnas in Human Ovarian Cancer
6.	R01	CA094172	Cho, Kathleen	Molecular Pathogenesis of Ovarian Endometrioid Adenocarcinomas
7.	R01	CA123233	Dhanasekaran, Danny	Regulation of JNK-Signaling Molecules by the Gep Oncogenes
8.	R01	CA133117*	Dubeau, Louis	Role of the Mullerian Tract in Ovarian Cancer Development
9.	R01	CA133117	Dubeau, Louis	Role of the Mullerian Tract in Ovarian Cancer Development
10.	R01	CA138835	Greenberg, Roger	The RAP80-BRCC36 Deubiquitinating Complex in DNA Repair
11.	R01	CA124630	Kakar, Sham	PTTG Role in Ovarian Tumorigenesis and Metastasis
12.	R01	CA136512	Livingston, David	BRCA1 Function in Post-Damage Nuclear Foci
13.	R01	CA138628	Pangas, Stephanie	Role of the BMP Smads in Oncogenesis
14.	R01	CA120429	Rodriguez-Rodriguez, Lorna	Regulation of MDR1 Expression and Drug Resistance by CD44

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Biology: Cancer initiation: Oncogenes and tumor suppressor genes (CSO 1.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
15.	R01	CA095175	Scully, Ralph	Analysis of BRCA1 Recombination Functions
16.	R01	CA129080	Shih, Ie-Ming	The Roles of HBXAP Gene in Ovarian Cancer
17.	R01	CA131400	Springett, Gregory	Validating and Targeting Lysophosphatidic Acid Acyltransferase-Beta in Cancer
18.	R01	CA119232	Wilson, Bridget	MSM Mapping and Modeling ErbB Receptor Membrane Topography
19.	R01	CA079716	Xu, Xiangxi Mike	Ovarian Cancer: Epithelial Dedifferentiation
20.	R01	CA132755	Yu, Xiaochun	Molecular Mechanisms of BRCA1-Dependent DNA Damage Response and Tumorigenesis
21.	R15	CA125731	Grossel, Martha	Functional Outcomes of Cdk6 and Eya2 Interaction
22.	ZIA	BC 01105	Annunziata, Christina	Nuclear Factor-Kappa-b in Ovarian Cancer
23.	ZIA	BC 01119	Appella, Ettore	Regulation and Function of WIP1 Phosphatase and Its Role in Tumor Cells
24.	ZIA	BC 00559	Appella, Ettore	Tumor Suppressor Protein, p53
25.	ZIA	BC 01097	Lipkowitz, Stanley	Cbl Proteins as Regulators of Tyrosine Kinase Signaling

CANCER PROGRESSION AND METASTASIS (CSO 1.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F31	CA159804	Bruney, Lana	Integrin Linked Kinase and Ovarian Cancer Metastasis
2.	F32	CA142117	Blaho, Victoria	Modulation of Tumor-Associated Macrophage Phenotype by S1P Receptors
3.	F32	CA159523	Kim, Jaeyeon	Understanding the Origin and Pathogenesis of Epithelial Ovarian Cancer
4.	F32	CA159558	Miller, Nichol	Role of P190RhoGEF (RGNEF) in Cell Motility and Tumor Progression
5.	R00	CA133190	Cowden Dahl, Karen	Epidermal Growth Factor Regulation of Mir-125a Promotes Invasive Ovarian Cancer
6.	R01	CA108970	Bankert, Richard	CD4+ Memory T Cells in Human Tumor Microenvironment
7.	R01	CA142832	Birrer, Michael	Novel Biomarkers in Ovarian Cancer
8.	R01	CA135006	Blobe, Gerard	Role of TbrIII in Regulating Motility and Invasion
9.	R01	CA137041	Cheng, Jin	Micrnas in Human Ovarian Cancer
10.	R01	CA157664	Conejo-Garcia, Jose	Initiation and Evolution of the Ovarian Cancer Microenvironment
11.	R01	CA124515	Conejo-Garcia, Jose	Vascular Leukocytes Influence the Tumor Microenvironment
12.	R01	CA136596	Connolly, Denise	The Role of HEF1 in Ovarian Cancer Development, Progression, and Metastasis

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Biology: Cancer progression and metastasis (CSO 1.4), cont.

No.	Mech	Project #	Principal Investigator	Project Title
13.	R01	CA116984	Dhanasekaran, Danny	G Proteins and Their Receptors in Tumor Cell Metastasis
14.	R01	CA124630	Kakar, Sham	PTTG Role in Ovarian Tumorigenesis and Matastasis
15.	R01	CA131183	Liu, Jinsong	RAS Signaling, Senescent Fibroblasts, and Ovarian Cancer Progression
16.	R01	CA140933	Lutgendorf, Susan	Biobehavioral Influences and the Ovarian Tumor Microenvironment
17.	R01	CA127913	Mor, Gil	Myd88-Bearing Tumors in Immune-Regulation and Chemo-Resistance
18.	R01	CA126841	Moysich, Kirsten	Regulatory T-Cell Function in Ovarian Cancer
19.	R01	CA141078	Naora, Honami	Multifunctional Roles of Homeobox Gene DLX4 in Ovarian Cancer
20.	R01	CA075334	Neeman, Michal	MRI Studies of Angiogenesis in Ovarian Cancer
21.	R01	CA138628	Pangas, Stephanie	Role of the BMP Smads in Oncogenesis
22.	R01	CA112240	Peter, Marcus	The Role of Fas as Tumor Promoter
23.	R01	CA149356	Peter, Marcus	The Role of MicroRNAs in Tumor Progression
24.	R01	CA142783	Slack-Davis, Jill	Signaling in the Ovarian Cancer Metastatic Microenvironment
25.	R01	CA109545	Stack, Mary	Receptor Cross-Talk in Early Metastatic Dissemination
26.	R01	CA148826	Wang, Tian-Li	Characterizing Notch3 Signaling in Ovarian Cancer
27.	R01	CA142776	Zhang, Lin	The Role of Microrna, Mir-30d, in the Initiation and Progression of Cancer
28.	R01	CA099985	Zou, Weiping	Human Tregs in Ovarian Cancer
29.	R01	CA156685	Zou, Weiping	Hypoxia and Regulatory T Cells in Cancer
30.	R01	CA152470	Zou, Weiping	Memory T Cells in the Tumor Microenvironment
31.	R01	CA123088	Zou, Weiping	Novel Immunosuppressive Macrophages in Human Ovarian Tumor
32.	R21	CA160917	Barbolina, Maria	Role of the Fractalkine Signaling in EOC
33.	R21	CA150237	Ng, Shu-Wing	Targeting Lipid Metabolic and Signaling Enzyme in Ovarian Cancer
34.	R44	CA140047	Chen, Wen-Tien	Cancer Progenitor Cell Markers
35.	ZIA	BC 01105	Annunziata, Christina	Nuclear Factor-Kappa-b in Ovarian Cancer
36.	ZIA	BC 01089	Ho, Mitchell	Antibody Therapy of Cancer
37.	ZIA	BC 01093	Stracke, Mary	Regulation of Metastasis and Angiogenesis by Autotaxin and Its Products

Gynecologic Cancers Portfolio Analysis

**Ovarian Cancer
Biology (CSO 1), cont.**

RESOURCES AND INFRASTRUCTURE (CSO 1.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
2.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
3.	R13	CA162868	Muggia, Franco	Symposium on Hereditary Breast and Ovarian Cancers: Lessening the Burden
4.	U01	CA105492	Holland, Eric	Using Mouse Models to Probe the Relationship of Oncogenesis to Development and Oncogene Dependence
5.	U19	CA148112	Sellers, Thomas	Follow-Up of Ovarian Cancer Genetic Association and Interaction Studies (FOCI)
6.	U24	CA114793	DiSaia, Philip	Gynecologic Oncology Group Specimen Banking
7.	U54	CA151662	Baker, Ian	Dartmouth Center for Cancer Nanotechnology Excellence

CANCER-RELATED BIOLOGY (CSO 1.6)²

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA109545	Stack, Mary	Receptor Cross-Talk in Early Metastatic Dissemination
2.	ZIA	CP010183	Anderson, Bill	SEER Special Studies
3.	ZIA	CP010190	Savage, Sharon	Telomere Length, Cancer Risk, and Genetic Determinants
4.	ZIA	CP010144	Wentzensen, Nicolas	Pilot Study: Collection, Analysis of Human Ovarian Surface Epithelial Cells
5.	ZIA	CP010126	Wentzensen, Nicolas	Pilot: Silent Markers in Endometrial and Ovarian Tissue

² CSO 1.6 is a historical code for general biology projects that is no longer applied to new projects.

ETIOLOGY (CSO 2)**EXOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.1)**

No.	Mech	Project #	Principal Investigator	Project Title
1.	K22	CA138563	Bandera, Elisa	Obesity in Ovarian Cancer Prognosis
2.	P01	CA087969	Stampfer, Meir	Dietary and Hormonal Determinants of Cancer in Women
3.	R01	CA058598	Goodman, Marc	Collaborative Genetic Study of Ovarian Cancer Risk
4.	R01	CA109298	Sood, Anil	Ovarian Cancer: Mechanisms of Neuroendocrine Regulation
5.	R01	CA078230	Vogt, Peter	P3K, Retroviral Oncogene and Homolog of PI 3-Kinase
6.	R37	CA057030*	Carroll, Raymond	Measurement Error, Nutrition and Breast/Colon Cancer
7.	R37	CA057030	Carroll, Raymond	Measurement Error, Nutrition and Breast/Colon Cancer
8.	ZIA	CP010128	Brinton, Louise	Infertility Follow-Up Study: 1965-88
9.	ZIA	BC 01093	Stracke, Mary	Regulation of Metastasis and Angiogenesis by Autotaxin and Its Products
10.	ZIA	CP010126	Wentzensen, Nicolas	Assessment of Screening Modalities for Gynecologic Cancers

ENDOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K07	CA143047	Sieh, Weiva	Genetic Epidemiology of Ovarian and Prostate Cancer
2.	R01	CA157664	Conejo-Garcia, Jose	Initiation and Evolution of the Ovarian Cancer Microenvironment
3.	R01	CA132630	Cravatt, Benjamin	Chemical Probes for Metabolic Pathway Discovery in Human Disease
4.	R01	CA123233	Dhanasekaran, Danny	Regulation of JNK-Signaling Molecules by the Gp Oncogenes
5.	R01	CA133117*	Dubeau, Louis	Role of the Mullerian Tract in Ovarian Cancer Development
6.	R01	CA133117	Dubeau, Louis	Role of the Mullerian Tract in Ovarian Cancer Development
7.	R01	CA039926	Emanuel, Beverly	Cytogenetic and Molecular Studies of Chromosome 22

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Etiology: Endogenous factors in the origin and cause of cancer (CSO 2.2), cont.

No.	Mech	Project #	Principal Investigator	Project Title
8.	R01	CA122443	Goode, Ellen	Genetic Variation in the NF-Kappab Pathway and Ovarian Cancer Etiology
9.	R01	CA055536	Howe, Philip	Transforming Growth Factor Beta Signaling Pathways
10.	R01	CA055536	Howe, Philip	Transforming Growth Factor Beta Signaling Pathways
11.	R01	CA092889	Mulder, Kathleen	Role of Tgfbeta in Microtubule Dynamics
12.	R01	CA127731*	Prossnitz, Eric	Development of GPR30-Selective Ligands
13.	R01	CA127731	Prossnitz, Eric	Development of GPR30-Selective Ligands
14.	R01	CA095175	Scully, Ralph	Analysis of BRCA1 Recombination Functions
15.	R01	CA114343	Sellers, Thomas	Haplotype-Based Genome Screen for Ovarian Cancer Loci
16.	R01	CA109298	Sood, Anil	Ovarian Cancer: Mechanisms of Neuroendocrine Regulation
17.	R01	CA131400	Springett, Gregory	Validating and Targeting Lysophosphatidic Acid Acyltransferase-Beta in Cancer
18.	R01	CA086984*	Stack, Mary	Regulation of Ovarian Carcinoma Proteinases
19.	R01	CA086984	Stack, Mary	Regulation of Ovarian Carcinoma Proteinases
20.	R01	CA148826	Wang, Tian-Li	Characterizing Notch3 Signaling in Ovarian Cancer
21.	R01	CA152470	Zou, Weiping	Memory T Cells in the Tumor Microenvironment
22.	R01	CA123088	Zou, Weiping	Novel Immunosuppressive Macrophages in Human Ovarian Tumor
23.	R15	CA125731	Grossel, Martha	Functional Outcomes of Cdk6 and Eya2 Interaction
24.	R21	CA161478	Fang, Xianjun	Regulation of Lipogenesis by Lysophosphatidic Acid in Ovarian Cancer
25.	R37	CA088480	Giaccia, Amato	Hypoxia and Gene Repression
26.	ZIA	BC 00559	Appella, Ettore	Tumor Suppressor Protein, p53
27.	ZIA	CP010128	Brinton, Louise	Infertility Follow-Up Study: 1965-88
28.	ZIA	CP010145	Greene, Mark	National Prospective Study of Risk-Reducing Salpingo-Oophorectomy and Ovarian Screening
29.	ZIA	SC 00916	Kohn, Elise	Signal Transduction Therapy – Basic Science
30.	ZIA	CP010144	Mai, Phuong	Hereditary Breast/Ovarian Cancer Families – Master Protocol
31.	ZIA	CP010190	Savage, Sharon	Telomere Length, Cancer Risk, and Genetic Determinants
32.	ZIA	CP010126	Wentzensen, Nicolas	Assessment of Screening Modalities for Gynecologic Cancers
33.	ZIA	CP010144	Wentzensen, Nicolas	Pilot Study: Collection, Analysis of Human Ovarian Surface Epithelial Cells
34.	ZIA	CP010126	Wentzensen, Nicolas	WHI Hormones and Gynecologic Cancers Study

Gynecologic Cancers Portfolio Analysis

**Ovarian Cancer
Etiology (CSO 2), cont.**

INTERACTIONS OF GENES AND/OR GENETIC POLYMORPHISMS WITH EXOGENOUS AND/OR ENDOGENOUS FACTORS (CSO 2.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
2.	R01	CA039926	Emanuel, Beverly	Cytogenetic and Molecular Studies of Chromosome 22
3.	R01	CA141154	Pearce, Celeste	Identifying Ovarian Cancer Susceptibility Alleles Using Genome-Wide Scan Data
4.	R01	CA142081	Schildkraut, Joellen	Epidemiology of Ovarian Cancer in African-American Women
5.	R01	CA114037	Sikic, Branimir	Taxane Resistance in Breast and Ovarian Cancer Cells
6.	R03	CA150039	Aikhionbare, Felix	Mitochondrial Genome Analysis of Epithelial Serous Ovarian Carcinoma
7.	U19	CA148112	Sellers, Thomas	Follow-Up of Ovarian Cancer Genetic Association and Interaction Studies (FOCI)
8.	ZIA	CP010207	Hsing, Ann	PLCO – Core
9.	ZIA	CP010152	Purdue, Mark	PLCO – Special Studies
10.	ZIA	CP010152	Wentzensen, Nicolas	PLCO – Ovarian Cancer and Endometrial Cancers
11.	ZIA	CP010126	Wentzensen, Nicolas	WHI Hormones and Gynecologic Cancers Study

RESOURCES AND INFRASTRUCTURE RELATED TO ETIOLOGY (CSO 2.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA122443	Goode, Ellen	Genetic Variation in the NF-kappa-b Pathway and Ovarian Cancer Etiology
2.	R01	CA058598	Goodman, Marc	Collaborative Genetic Study of Ovarian Cancer Risk
3.	R01	CA114343	Sellers, Thomas	Haplotype-Based Genome Screen for Ovarian Cancer Loci
4.	R01	CA094069	Whittemore, Alice	Statistical Methods for Genetic Epidemiology
5.	R03	CA143918	Tworoger, Shelley	Characteristics of Tubal Ligation and Risk of Epithelial Ovarian Cancer
6.	U01	CA049449	Hankinson, Susan	Biochemical Markers in the Nurses Health Study Cohort
7.	ZIA	CP010207	Hsing, Ann	PLCO – Core
8.	ZIA	CP010152	Purdue, Mark	PLCO – Special Studies
9.	ZIA	CP010126	Wentzensen, Nicolas	Pilot: Silent Markers in Endometrial and Ovarian Tissue
10.	ZIA	CP010126	Wentzensen, Nicolas	Polish Gynecologic Cancer Case-Control Study

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Etiology: Resources and infrastructure (CSO 2.4), cont.

No.	Mech	Project #	Principal Investigator	Project Title
11.	ZIE	BC 01113	Kohn, Elise	The CCR/Walter Reed Army Medical Center Gynecologic Cancer Program Research Lab

PREVENTION (CSO 3)

INTERVENTIONS TO PREVENT CANCER: PERSONAL BEHAVIORS THAT AFFECT CANCER RISK (CSO 3.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R03	CA143918	Tworoger, Shelley	Characteristics of Tubal Ligation and Risk of Epithelial Ovarian Cancer
2.	ZIA	CP010145	Greene, Mark	National Prospective Study of Risk-Reducing Salpingo-Oophorectomy and Ovarian Screening
3.	ZIA	CP010144	Mai, Phuong	Hereditary Breast/Ovarian Cancer Families – Master Protocol

NUTRITIONAL SCIENCE IN CANCER PREVENTION (CSO 3.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P01	CA087969	Stampfer, Meir	Dietary and Hormonal Determinants of Cancer in Women
2.	R03	CA162511	Hales, Dale	Fish Oil for the Prevention and Treatment of Ovarian Cancer

CHEMOPREVENTION (CSO 3.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA099471	Xu, XiangXi Mike	Gonadotropins & Cox-2 in Ovarian Cancer Prevention

VACCINES (CSO 3.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA083638	Seiden, Michael	FCCC-PENN SPORE in Ovarian Cancer

COMPLEMENTARY AND ALTERNATIVE APPROACHES (CSO 3.5)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO PREVENTION (CSO 3.6)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R03	CA150136	Whittemore, Alice	Validating Cancer Risk Models: A Pilot Study to Evaluate Cost-Efficient Methods
2.	R13	CA162868	Muggia, Franco	Symposium on Hereditary Breast and Ovarian Cancers: Lessening the Burden

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS (CSO 4)

TECHNOLOGY DEVELOPMENT AND/OR MARKER DISCOVERY (CSO 4.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F31	CA144083	Schramm, Danielle	Defining Double-Stranded RNA Receptor Induced Apoptosis in Ovarian Cancer
2.	K25	CA128666	Hawkrige, Adam	Comparative Proteomics Applied to the Avian Model of Ovarian Cancer
3.	K25	CA120350	Romanowski, Marek	A Near-Infrared Contrast Agent for Targeted Imaging of Cancer
4.	R01	CA119200	Barton, Jennifer	Optical Imaging of Ovarian Carcinogenesis in a Rat Menopause Model
5.	R01	CA142832	Birrer, Michael	Novel Biomarkers in Ovarian Cancer
6.	R01	CA158881	Coleman, Timothy	Integrated Image-Guided Targeted Therapy for Refractory Ovarian Cancer
7.	R01	CA156695	Coukos, George	Transformative Personalized Vascular Disrupting Cancer Immunotherapy
8.	R01	CA115780*	Gmitro, Arthur	Diagnosis of Ovarian Cancer by Confocal Microendoscopy
9.	R01	CA115780	Gmitro, Arthur	Diagnosis of Ovarian Cancer by Confocal Microendoscopy
10.	R01	CA160998	Hasan, Tayyaba	Ovarian Cancer PDT: Multi-Intracellular Targeting and Image-Guided Dosimetry
11.	R01	CA134487	Hellstrom, Ingegerd	Mesothelin as Biomarker and Therapeutic Target
12.	R01	CA108990	Lokshin, Anna	Urine and Serum Biomarkers for Screening and Diagnosis of Ovarian Cancer
13.	R01	CA151374	Martin, Lainie	Evaluation of In Vivo Optical Imaging in Pancreatic and Ovarian Cancer Patients
14.	R01	CA133057	Mok, Samuel	Prognostic Markers for Ovarian Cancer

Ovarian Cancer

Early Detection, Diagnosis, and Prognosis: Technology development and/or marker discovery (CSO 4.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
15.	R01	CA136491	Moore, Richard	Development of an Assay for the Early Detection of Ovarian Cancer
16.	R01	CA075334	Neeman, Michal	MRI Studies of Angiogenesis in Ovarian Cancer
17.	R01	CA154460	Santin, Alessandro	CPE Peptide-Based Nanoparticles for the Diagnosis and Therapy of Chemotherapy Resistant Ovarian Cancer
18.	R01	CA135242	Sengupta, Shiladitya	Multifunctional Nanoparticles for Targeting Aberrant Tumorigenic Pathways
19.	R01	CA131582	Speicher, David	Identification of Ovarian Cancer Plasma Biomarkers
20.	R01	CA131965	Swisher, Elizabeth	Defining a Pre-Malignant Phenotype in Fallopian Tube Epithelium
21.	R01	CA135312	Tung, Ching-Hsuan	Dendritic Nanomedicine for Cancer Imaging and Treatment
22.	R01	CA129927	West, Robert	Discovery of Gene Expression Signatures in Cancer Stroma
23.	R01	CA129927	West, Robert	Discovery of Gene Expression Signatures in Cancer Stroma
24.	R01	CA133148*	Xu, Chris	Academic-Industrial Partnership for Development of In Vivo Imaging Systems and Methods for Cancer Investigations
25.	R01	CA133148	Xu, Chris	Academic-Industrial Partnership for Development of In Vivo Imaging Systems and Methods for Cancer Investigations
26.	R01	CA151570	Zhu, Quing	Co-Registered Photoacoustic and Ultrasound Imaging for Non-Invasive Ovarian Cancer Detection and Characterization
27.	R15	CA161970	Whelan, Rebecca	Development of Aptamer-Based Detection and Therapy Strategies for Ovarian Cancer
28.	R21	CA156944	Backman, Vadim	Biophotonics Noninvasive Detection of Ovarian Cancer
29.	R21	CA137681	Chiles, Thomas	A Novel Nanocoaxial Biosensor for Detection of Cancer Biomarkers
30.	R21	CA159232	Daugherty, Patrick	Biomolecular Probes for Imaging Protease Activities
31.	R21	CA155535	Evans, Conor	Hyperspectral and Structural Microscopy Platform for Therapy of Resistant Cancer
32.	R21	CA143736	Lokshin, Anna	Development of a Multimarker Urine-Based Test for Early Diagnosis and Screening of Ovarian Cancer
33.	R21	CA143616	Patankar, Manish	Ovarian Cancer Diagnosis by Monitoring Immune Cell Bound MUC16 (CA125)
34.	R21	CA152540	Powell, Daniel	Tailored Antigen Specificity for Personalized Adoptive T-Cell Therapy of Cancer

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Early Detection, Diagnosis, and Prognosis: Technology development and/or marker discovery (CSO 4.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
35.	R21	CA137686	Wirtz, Denis	High-Throughput Intracellular Microrheology: A New Tool for Cancer Research
36.	R33	CA147988	Muddiman, David	Development and Application of Novel Glycan-Specific Reagents to Facilitate Early
37.	R33	CA155618	Superfine, Richard	Array Microscope Assay for Cancer Cell Mechanics
38.	R43	CA154339	Aguilar, Zoraida	Magnetic Nanoparticles and Quantum Dots for Diagnosis of Early Stage Ovarian Cancer
39.	R43	CA144591	Coleman, Timothy	EGFR-Targeted Nanoemulsions for Imaging and Therapy of Ovarian Cancer
40.	R43	CA159478	Lelental, Mark	Utrasensitive Bioassays Using Palladium Catalyzed Chemical Amplification
41.	R44	CA133987	Duffy, David	Single Molecule Fiber Arrays for the Detection of Low Abundance Proteins
42.	R44	CA130391	Kenten, John	Human Proteome Arrays for Auto-Antibody Identification in Clinical Cancer Studies
43.	U01	CA128526	Huflejt, Margaret	Discovery and Clinical Validation of Cancer Biomarkers Using Printed Glycan Array
44.	U01	CA128535	Novotny, Milos	Early Cancer Detection & Prognosis Through Glycomics
45.	U01	CA128442	Varki, Ajit	Neu5Gc and Anti-Neu5Gc Antibodies for Detection of Cancer and Cancer Risk
46.	U24	CA160034	Carr, Steven	Proteo-Genomic Discovery, Prioritization and Verification of Cancer Biomarkers
47.	U24	CA160036	Chan, Daniel	Proteome Characterization Center: A Genoproteomics Pipeline for Cancer Biomarkers
48.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine
49.	ZIA	BC 01065	Choyke, Peter	Intracellular In Vivo Imaging
50.	ZIA	BC 01135	Van Dyke, Terry	Development and Validation of Preclinical Mouse Model for Serous Ovarian Cancer
51.	ZIE	BC 01113	Kohn, Elise	The CCR/Walter Reed Army Medical Center Gynecologic Cancer Program Research Lab

TECHNOLOGY AND/OR MARKER EVALUATION WITH RESPECT TO FUNDAMENTAL PARAMETERS OF METHOD (CSO 4.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
2.	R01	CA134424	Kostuk, Raymond	A Spatial-Spectral Volume Holographic Imaging System for Ex-Vivo and In-Vivo Cancer Visualization
3.	R01	CA118678	Mor, Gil	Apoptotic Regulators in Ovarian Cancer

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Ovarian Cancer

Early Detection, Diagnosis, and Prognosis: Technology and/or marker evaluation with respect to fundamental parameters of method (CSO 4.2), cont.

No.	Mech	Project #	Principal Investigator	Project Title
4.	R01	CA160541	Tainsky, Michael	Validation of an Antibody Test for Early Diagnosis of Ovarian Cancer
5.	R33	CA126667	Minderman, Hans	Clinical Application of Multispectral Imaging Flow Cytometry
6.	R37	CA087660	Cravatt, Benjamin	Chemical Approaches for Activity-Based Proteomics
7.	R44	CA144586	Holt, Jeffrey	IHC Test for BRCA1 Hereditary Ovarian Cancer
8.	R44	CA130391	Kenten, John	Human Proteome Arrays for Auto-Antibody Identification in Clinical Cancer Studies
9.	U01	CA152990	Skates, Steven	Proteomic, Genetic & Longitudinal Pathways to Ovarian Cancer Biomarker Discovery
10.	ZIA	BC 01065	Choyke, Peter	Intracellular In Vivo Imaging
11.	ZIA	SC 00937	Kohn, Elise	Signal Transduction Therapy – Clinical

TECHNOLOGY AND/OR MARKER TESTING IN A CLINICAL SETTING (CSO 4.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	N01	CN025516-100	Andriole, Gerald	Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial – Screening
2.	N01	CN075022-068	Fouad, Mona	Prostate, Lung, Colo-Rectal and Ovarian (PLCO) Cancer Screening Trial Expansion for Minority Enrollment
3.	R01	CA126841	Moysich, Kirsten	Regulatory T-Cell Function in Ovarian Cancer
4.	R01	CA151570	Zhu, Quing	Co-Registered Photoacoustic and Ultrasound Imaging for Non-Invasive Ovarian Cancer Detection and Characterization
5.	R03	CA159080	Wernli, Karen	Mammographic Breast Density and Ovarian Cancer
6.	R21	CA156944	Backman, Vadim	Biophotonics Noninvasive Detection of Ovarian Cancer
7.	R33	CA126667	Minderman, Hans	Clinical Application of Multispectral Imaging Flow Cytometry
8.	U01	CA152755	Diamandis, Eleftherios	An Integrated Systems Biology Approach for Ovarian Cancer Biomarker Discovery
9.	U01	CA084955	Marks, Jeffrey	Atlantic Breast and Gynecologic Clinical Validation Center
10.	ZIA	SC 00937	Kohn, Elise	Signaling Pathways as Molecular Targets in Angiogenesis and Microenvironment

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer
Early Detection, Diagnosis, and Prognosis (CSO 4), cont.

RESOURCES AND INFRASTRUCTURE RELATED TO DETECTION, DIAGNOSIS, OR PROGNOSIS (CSO 4.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K24	CA125036	Smith-Bindman, Rebecca	Risk of Cancer in Incidental Findings Identified on Ultrasound Imaging
2.	N01	CN025476-085	O'Brien, Barbara	Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial, Study Coordinating Center
3.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
4.	R01	CA121187	Curiel, David	Monitoring of Advanced Virotherapy for Ovarian Cancer
5.	R01	CA155305	Wang, Tza-Huei	Multiplexed Detection of Cell Free DNA Biomarkers for Cancer
6.	R15	CA161970	Whelan, Rebecca	Development of Aptamer-Based Detection and Therapy Strategies for Ovarian Cancer
7.	U01	CA152755	Diamandis, Eleftherios	An Integrated Systems Biology Approach for Ovarian Cancer Biomarker Discovery
8.	U01	CA152637	Li, Christopher	Breast and Ovary Cancer Clinical Validation Center
9.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine
10.	ZIA	CP010152	Wentzensen, Nicolas	PLCO – Ovarian Cancer and Endometrial Cancers
11.	ZIA	CP010126	Wentzensen, Nicolas	Polish Gynecologic Cancer Case-Control Study

TREATMENT (CSO 5)

LOCALIZED THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA156695	Coukos, George	Transformative Personalized Vascular Disrupting Cancer Immunotherapy
2.	R01	CA140323	Godwin, Andrew	Exploiting Biological Networks to Improve Clinical Treatment of Ovarian Cancer
3.	R01	CA135312	Tung, Ching-Hsuan	Dendritic Nanomedicine for Cancer Imaging and Treatment
4.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine

LOCALIZED THERAPIES: CLINICAL APPLICATIONS (CSO 5.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P01	CA087971	Glatstein, Eli	Photodynamic Therapy for Neoplastic Diseases Involving Serosal Surfaces
2.	U10	CA037517	Blessing, John	Gynecologic Oncology Group Statistical and Data Center
3.	U10	CA027469*	DiSaia, Philip	Gynecologic Oncology Group
4.	U10	CA027469	DiSaia, Philip	Gynecologic Oncology Group

SYSTEMIC THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	F31	CA165853	Mitchell, Shermaine	Therapeutic Targeting of Novel Antifolates to Solid Tumors via Folate Receptor
2.	K01	CA120091	Hopper-Borge, Elizabeth	Studies on a Novel Taxane Pump
3.	K08	CA148887	Khabele, Dineo	Targeting Histone Deacetylases with Small Molecule Inhibitors in Ovarian Cancer
4.	K08	CA151892	Simpkins, Fiona	Targeting Src Signaling Pathways to Promote Cell Cycle Arrest in Ovarian Cancer
5.	N43	CO110091-000	Pearson, Paul	Topic 255 Selective and Potent Inhibitors of Tumor Specific Glucose Metabolism as a Novel, Targeted Anti-Cancer
6.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
7.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
8.	P50	CA083638	Seiden, Michael	FCCC-PENN SPORE in Ovarian Cancer
9.	R01	CA131407	Bankert, Richard	Re-Activating Memory T Cells in the Microenvironment of Human Tumors
10.	R01	CA155925	Bartlett, David	Improving Vaccinia for Peritoneal Tumors: Enhanced Distribution & Immune Evasion
11.	R01	CA138762	Beck, William	Splicing Factors as Therapeutic Targets for the Treatment of Ovarian Cancer
12.	R01	CA148747	Cliby, William	Targeting the Mullerian Inhibiting Substance Pathway in Gynecologic Cancer
13.	R01	CA158881	Coleman, Timothy	Integrated Image-Guided Targeted Therapy for Refractory Ovarian Cancer
14.	R01	CA124515	Conejo-Garcia, Jose	Vascular Leukocytes Influence the Tumor Microenvironment
15.	R01	CA142838	Daniel, Larry	Role of Redox State in Ovarian Cancer Response to Cisplatin
16.	R01	CA131200	Eblen, Scott	Regulation of Ovarian Cancer Multidrug Resistance by MAP Kinases

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Treatment: Systemic therapies: Discovery and development (CSO 5.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
17.	R01	CA134487	Hellstrom, Ingegerd	Mesothelin as Biomarker and Therapeutic Target
18.	R01	CA095298*	Howell, Stephen	Cisplatin Resistance Mediated by Copper Export Pathways
19.	R01	CA095298	Howell, Stephen	Cisplatin Resistance Mediated by Copper Export Pathways
20.	R01	CA159042	Kundra, Vikas	Personalizing Nanoparticle Therapy
21.	R01	CA149260	Kuo, Macus	Improving the Efficacy of Cisplatin-Based Cancer Chemotherapy
22.	R01	CA115483*	Lam, Kit	Therapeutic Targeting Agents for Ovarian Cancer
23.	R01	CA115483	Lam, Kit	Therapeutic Targeting Agents for Ovarian Cancer
24.	R01	CA144057	Lieber, Andre	Evaluation of Vectors Based on Group B Adenoviruses
25.	R01	CA152316	Matherly, Larry	Discovery of Novel PCFT-Targeted Agents
26.	R01	CA138533	Minko, Tamara	Multifunctional Nanotherapeutics for Cancer Treatment and Imaging
27.	R01	CA118678	Mor, Gil	Apoptotic Regulators in Ovarian Cancer
28.	R01	CA127913	Mor, Gil	Myd88-Bearing Tumors in Immune Regulation and Chemo-Resistance
29.	R01	CA136494	Mukherjee, Priyabrata	Molecular Mechanism of Antiangiogenic Properties of Gold Nanoparticle
30.	R01	CA127239	Natarajan, Amarnath	Pbach1 Binding Site on BRCT(BRCA1): A Novel Approach to Cancer Therapeutics
31.	R01	CA085289	Nephew, Kenneth	DNA Methylation and Ovarian Cancer
32.	R01	CA127731*	Prossnitz, Eric	Development of GPR30-Selective Ligands
33.	R01	CA127731	Prossnitz, Eric	Development of GPR30-Selective Ligands
34.	R01	CA114340	Ramakrishnan, Sundaram	Antiangiogenic Gene Therapy of Ovarian and Breast Cancers
35.	R01	CA120429	Rodriguez-Rodriguez, Lorna	Regulation of MDR1 Expression and Drug Resistance by CD44
36.	R01	CA091901	Rohr, Jurgen	Novel Aureolic Acid-Type Antitumor Agents
37.	R01	CA154460	Santin, Alessandro	CPE Peptide-Based Nanoparticles for the Diagnosis and Therapy of Chemotherapy Resistant Ovarian Cancer
38.	R01	CA132091	Sawicki, Janet	Targeted Nanoparticle DNA Therapy for Ovarian Cancer
39.	R01	CA130911	Sentman, Charles	Chimeric NKG2D Receptors in Ovarian Cancer Immunotherapy
40.	R01	CA103937	Shih, Ie-Ming	Molecular Diagnostics for Malignant Effusion
41.	R01	CA123249	Shridhar, Viji	Regulation of Serine Protease HTRA1 and Chemoresponse
42.	R01	CA127263	Siddik, Zahid	Checkpoint Response and Platinum Drug Sensitivity
43.	R01	CA160687	Siddik, Zahid	Targeted Development of Platinum Drugs

Ovarian Cancer

Treatment: Systemic therapies: Discovery and development (CSO 5.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
44.	R01	CA114037	Sikic, Branimir	Taxane Resistance in Breast and Ovarian Cancer Cells
45.	R01	CA125636	Taniguchi, Toshiyasu	The Fanconi Anemia-BRCA Pathway and Chemosensitivity of Human Cancer
46.	R01	CA124545	Thorburn, Andrew	TRAIL Receptor Signaling in Human Tumors
47.	R01	CA082741	Turchi, John	Recognition and Repair of Cisplatin-DNA Damage
48.	R01	CA127562	Ueno, Naoto	Development of PEA 15 as a Targeted Therapeutic Gene for Ovarian Cancer
49.	R01	CA151248	Wang, Qien	Role of DDB2 in Chemotherapeutic Agents-Induced Apoptosis and Platinum Resistance
50.	R01	CA070375	Williams, Robert	Total Synthesis and Biosynthesis of Bioactive Substances
51.	R01	CA149669	Zhang, Bin	CD73 and Tumor Immunity
52.	R03	CA141318	Kohtz, Donald	Nuclear Pore Complex Architecture and Drug Resistance in Ovarian Carcinomas
53.	R15	CA151006*	Murph, Mandi	Modulation of RGS Proteins and Ovarian Cancer Chemoresistance
54.	R21	CA135594	Amiji, Mansoor	Nano-Delivery of Mitochondria-Specific Ceramide to Overcome Tumor Drug Resistance
55.	R21	CA155424	Lavie, Arnon	Enzyme-Delivery Scaffold Technology for Targeted Cancer Killing.
56.	R21	CA155479	Mcdonald, John	Use of Nanogels to Target Delivery of Sirna to Cancer Cells in Mice
57.	R21	CA152540	Powell, Daniel	Tailored Antigen Specificity for Personalized Adoptive T-Cell Therapy of Cancer
58.	R33	CA110499	Lancaster, Johnathan	Molecular Profiling to Predict Response to Chemotherapy
59.	R41	CA156933	Kopecek, Jindrich	Backbone Degradable Polymer-Drug Conjugates for the Treatment of Ovarian Cancer
60.	R43	CA144591	Coleman, Timothy	EGFR-Targeted Nanoemulsions for Imaging and Therapy of Ovarian Cancer
61.	U01	CA151452	Amiji, Mansoor	Combinatorial-Designed Nano-Platforms to Overcome Tumor Drug Resistance
62.	U01	CA151648	Guo, Peixuan	RNA Nanotechnology in Cancer Therapy
63.	U01	CA151461	O'halloran, Thomas	Tumor Targeted Nanobins for the Treatment of Metastatic Breast and Ovarian Cancer
64.	U54	CA151662	Baker, Ian	Dartmouth Center for Cancer Nanotechnology Excellence
65.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine
66.	ZIA	BC 01119	Appella, Ettore	Regulation and Function of WIP1 Phosphatase and Its Role in Tumor Cells
67.	ZIA	BC 01089	Ho, Mitchell	Antibody Therapy of Cancer
68.	ZIA	SC 00937	Kohn, Elise	Signal Transduction Therapy – Clinical

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Treatment: Systemic therapies: Discovery and development (CSO 5.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
69.	ZIA	SC 00916	Kohn, Elise	Signal Transduction Therapy – Basic Science
70.	ZIA	SC 00937	Kohn, Elise	Signaling Pathways as Molecular Targets in Angiogenesis and Microenvironment

SYSTEMIC THERAPIES – CLINICAL APPLICATIONS (CSO 5.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
2.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
3.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
4.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
5.	K12	CA087723	Chabner, Bruce	Clinical Research Career Development Program
6.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
7.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
8.	P50	CA083636	Urban, Nicole	Pacific Ovarian Cancer Research Consortium
9.	R01	CA158318	Odunsi, Kunle	mTOR Inhibition for Generating Memory T Cells to Enhance Ovarian Tumor Immunity
10.	R01	CA136547	Peng, Kah-Whye	Optimizing Measles Virotherapy in the Treatment of Ovarian Cancer
11.	R01	CA122728	Santin, Alessandro	Treatment of Chemotherapy-Resistant Human Ovarian Cancer by Administration of CPE
12.	R01	CA123197	Zhou, Tong	Death Receptor-Mediated Apoptosis and Therapy Strategies in Ovarian Cancer
13.	R21	CA156224	Coukos, George	Vaccine-Dac/Bev Combinatorial Therapy in Ovarian Cancer
14.	U10	CA037517	Blessing, John	Gynecologic Oncology Group Statistical and Data Center
15.	U10	CA027469*	DiSaia, Philip	Gynecologic Oncology Group
16.	U10	CA027469	DiSaia, Philip	Gynecologic Oncology Group
17.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine

COMBINATIONS OF LOCALIZED AND SYSTEMIC THERAPIES (CSO 5.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA085831	Busch, Theresa	Effects of Photodynamic Therapy on Tumor Oxygenation and Blood Flow
2.	R01	CA160998	Hasan, Tayyaba	Ovarian Cancer PDT: Multi-Intracellular Targeting and Image-Guided Dosimetry
3.	R01	CA127239	Natarajan, Amarnath	Pbach1 Binding Site on BRCT(BRCA1): A Novel Approach to Cancer Therapeutics

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Treatment: Combinations of localized and systemic therapies (CSO 5.5), cont.

No.	Mech	Project #	Principal Investigator	Project Title
4.	R01	CA129339	Senger, Donald	Rectifying Defects in Tumor Vasculature to Improve Chemo- and Radiation Therapies
5.	U54	CA151662	Baker, Ian	Dartmouth Center for Cancer Nanotechnology Excellence

COMPLEMENTARY AND ALTERNATIVE TREATMENT APPROACHES (CSO 5.6)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO TREATMENT AND THE PREVENTION OF RECURRENCE (CSO 5.7)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
2.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
3.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
4.	K12	CA087723*	Chabner, Bruce	Clinical Research Career Development Program
5.	K12	CA087723	Chabner, Bruce	Clinical Research Career Development Program
6.	P50	CA083639	Bast, Robert	The University of Texas M. D. Anderson Cancer Center SPORE in Ovarian Cancer
7.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer
8.	U54	CA151662	Baker, Ian	Dartmouth Center for Cancer Nanotechnology Excellence
9.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6)

PATIENT CARE AND SURVIVORSHIP ISSUES (CSO 6.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA154938	Ceballos, Rachel	Addressing Psychosocial Disparities in Rural Hispanic Cancer Survivors
2.	K22	CA138563	Bandera, Elisa	Obesity in Ovarian Cancer Prognosis
3.	N44	CO110107-000	Yang, Dershung	Phase II SBIR Topic 262 "Patient-Centered Communication for Post-Diagnosis Care"
4.	R01	CA157176	Bickell, Nina	Racial Disparities, Survival & Secondary Debulking for Ovarian Cancer
5.	R01	CA138556	Irwin, Melinda	Impact of Exercise on Ovarian Cancer Prognosis

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer

Cancer Control, Survivorship, and Outcomes Research: Patient care and survivorship issues (CSO 6.1), cont.

No.	Mech	Project #	Principal Investigator	Project Title
6.	R01	CA085566	Manne, Sharon	Psychological Intervention for Ovarian Cancer Patients
7.	R01	CA134900	Miaskowski, Christine	Symptoms Clusters in Oncology Patients Receiving Chemotherapy
8.	R01	CA138808	Pereira, Deidre	Cognitive Behavioral Effects on Sleep, Pain, and Cytokines in Gynecologic Cancer
9.	R03	CA153815	Bober, Sharon	The High Cost of Risk Reduction: Addressing Sexual Dysfunction After Oophorectomy

SURVEILLANCE (CSO 6.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K24	CA125036	Smith-Bindman, Rebecca	Risk of Cancer in Incidental Findings Identified on Ultrasound Imaging
2.	N02	CN110008-000	O'Brien, Barbara	Central Data Collection Center (CDCC) – Continued Follow-Up of PLCO Participants
3.	R01	CA142081	Schildkraut, Joellen	Epidemiology of Ovarian Cancer in African-American Women
4.	R01	CA135179	Schwartz, Marc	Internet Decision Support for BRCA1/BRCA2 Carriers
5.	R01	CA050597	Spiegelman, Donna	Measurement Errors in Cancer Epidemiology
6.	R01	CA094069	Whittemore, Alice	Statistical Methods for Genetic Epidemiology
7.	R03	CA157212	Buchanan, Adam	Adherence to Cancer Risk Management Among Unaffected BRCA1/2 Mutation Carriers
8.	ZIA	CP010183	Anderson, Bill	SEER Special Studies

BEHAVIOR (CSO 6.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA129096*	Pasick, Rena	Statewide Communication to Reach Diverse Low Income Women
2.	R01	CA129096	Pasick, Rena	Statewide Communication to Reach Diverse Low Income Women
3.	R03	CA157212	Buchanan, Adam	Adherence to Cancer Risk Management Among Unaffected BRCA1/2 Mutation Carriers
4.	R03	CA139905	Jandorf, Lina	Sociocultural Factors and BRCA Genetic Counseling for Diverse Latinas

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer
Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

COST ANALYSIS AND HEALTH CARE DELIVERY (CSO 6.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA129142	Kinney, Anita	Bridging Geographic Barriers: Remote Cancer Genetics Counseling for Rural Women

EDUCATION AND COMMUNICATION (CSO 6.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA129142	Kinney, Anita	Bridging Geographic Barriers: Remote Cancer Genetics Counseling for Rural Women
2.	R01	CA129096*	Pasick, Rena	Statewide Communication to Reach Diverse Low Income Women
3.	R01	CA129096	Pasick, Rena	Statewide Communication to Reach Diverse Low Income Women
4.	R01	CA135179	Schwartz, Marc	Internet Decision Support for BRCA1/BRCA2 Carriers
5.	T32	CA101642	Bodurka, Diane	Training of Academic Gynecologic Oncologists
6.	T32	CA060396	DiSaia, Philip	Gynecologic Oncology Fellowship Program
7.	T32	CA009001	Stampfer, Meir	Training Program in Cancer Epidemiology
8.	U10	CA101165	DiSaia, Philip	Gynecologic Oncology Group

END-OF-LIFE CARE (CSO 6.6)

No projects.

ETHICS AND CONFIDENTIALITY IN CANCER RESEARCH (CSO 6.7)

No projects.

COMPLEMENTARY AND ALTERNATIVE APPROACHES FOR SUPPORTIVE CARE OF PATIENTS AND SURVIVORS (CSO 6.8)

No projects.

Ovarian Cancer
Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

RESOURCES AND INFRASTRUCTURE RELATED TO CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6.9)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA157176	Bickell, Nina	Racial Disparities, Survival & Secondary Debulking for Ovarian Cancer
2.	R01	CA157176	Bickell, Nina	Racial Disparities, Survival & Secondary Debulking for Ovarian Cancer
3.	R01	CA050597	Spiegelman, Donna	Measurement Errors in Cancer Epidemiology
4.	R01	CA050597	Spiegelman, Donna	Measurement Errors in Cancer Epidemiology
5.	U10	CA101165	DiSaia, Philip	Gynecologic Oncology Group
6.	U10	CA101165	DiSaia, Philip	Gynecologic Oncology Group

SCIENTIFIC MODEL SYSTEMS (CSO 7)

DEVELOPMENT AND CHARACTERIZATION OF MODEL SYSTEMS (CSO 7.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA120091	Hopper-Borge, Elizabeth	Studies on a Novel Taxane Pump
2.	R01	CA086984*	Stack, Mary	Regulation of Ovarian Carcinoma Proteinases
3.	R01	CA086984	Stack, Mary	Regulation of Ovarian Carcinoma Proteinases
4.	R01	CA119232	Wilson, Bridget	MSM Mapping and Modeling ErbB Receptor Membrane Topography
5.	R37	CA057030*	Carroll, Raymond	Measurement Error, Nutrition and Breast/Colon Cancer
6.	R37	CA057030	Carroll, Raymond	Measurement Error, Nutrition and Breast/Colon Cancer
7.	U54	CA151668	Gorenstein, David	Texas Center for Cancer Nanomedicine
8.	U54	CA113001	Huang, Tim	Interrogating Epigenetic Changes in Cancer Genomes
9.	ZIA	BC 01135	Van Dyke, Terry	Development and Validation of Preclinical Mouse Model for Serous Ovarian Cancer
10.	ZIA	BC 01141	Van Dyke, Terry	Development of ES/iPSC Approach for Non-Germline GEM Modelling
11.	ZIC	BC 01113	Van Dyke, Terry	Center for Applied Preclinical Research (CAPR)

APPLICATION OF MODEL SYSTEMS (CSO 7.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA119200	Barton, Jennifer	Optical Imaging of Ovarian Carcinogenesis in a Rat Menopause Model

Gynecologic Cancers Portfolio Analysis

Ovarian Cancer
Scientific Model Systems (CSO 7), cont.

No.	Mech	Project #	Principal Investigator	Project Title
2.	U19	CA148112	Sellers, Thomas	Follow-Up of Ovarian Cancer Genetic Association and Interaction Studies (FOCI)
3.	ZIA	BC 01141	Van Dyke, Terry	Development of ES/iPSC Approach for Non-Germline GEM Modelling
4.	ZIC	BC 01113	Van Dyke, Terry	Center for Applied Preclinical Research (CAPR)

RESOURCES AND INFRASTRUCTURE RELATED TO SCIENTIFIC MODEL SYSTEMS (CSO 7.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA136393	Hartmann, Lynn	Mayo Clinic SPORE in Ovarian Cancer

UTERINE CANCER PROJECTS

BIOLOGY (CSO 1)

NORMAL FUNCTIONING (CSO 1.1)

No projects.

CANCER INITIATION: ALTERATIONS IN CHROMOSOMES (CSO 1.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA139102	Sklar, Jeffrey	Trans-Splicing of RNA in Endometrial Stroma and Other Tissues

CANCER INITIATION: ONCOGENES AND TUMOR SUPPRESSOR GENES (CSO 1.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA137181*	Castrillon, Diego	Mouse Models and Translational Studies of Endometrial Cancer
2.	R01	CA137181	Castrillon, Diego	Mouse Models and Translational Studies of Endometrial Cancer
3.	R01	CA095427	Ellenson, Lora	Mouse Model of Endometrial Tumorigenesis
4.	R01	CA125427	Jackson, Twila	Extranuclear Estrogen Receptor Actions on Endometrial Cancer Cell Proliferation
5.	R01	CA128571	Merrill, Bradley	Embryonic Stem Cell Properties in Cancer

Gynecologic Cancers Portfolio Analysis

Uterine Cancer

Biology: Cancer initiation: Oncogenes and tumor suppressor genes (CSO 1.3), cont.

No.	Mech	Project #	Principal Investigator	Project Title
6.	R01	CA119232	Wilson, Bridget	MSM Mapping and Modeling ErbB Receptor Membrane Topography
7.	U01	CA141576	Castrillon, Diego	LKB1 Tumor Suppressor and Human Cancer
8.	ZIA	BC 01131	Annunziata, Christina	Molecular Characterization of Endometrial Cancer

CANCER PROGRESSION AND METASTASIS (CSO 1.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer
2.	R01	CA107429	Benezra, Robert	The Role of Endothelial Progenitor Cells in Tumor Growth and Metastasis
3.	R01	CA133010	Strickler, Howard	Role of the Sex Hormones and Insulin/IGF-Axes in Endometrial Cancer Recurrence
4.	ZIA	BC 01079	Niederhuber, John	Mechanisms of Stromal Cell Activation by the Developing Tumor

RESOURCES AND INFRASTRUCTURE RELATED TO BIOLOGY (CSO 1.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers
2.	U24	CA114793	DiSaia, Philip	Gynecologic Oncology Group Specimen Banking

CANCER-RELATED BIOLOGY (CSO 1.6)³

No.	Mech	Project #	Principal Investigator	Project Title
1.	ZIA	CP010144	Wentzensen, Nicolas	Pilot Study: Collection, Analysis of Human Ovarian Surface Epithelial Cells
2.	ZIA	CP010126	Wentzensen, Nicolas	Pilot: Silent Markers in Endometrial and Ovarian Tissue

³ CSO 1.6 is a historical code for general biology projects that is no longer applied to new projects.

ETIOLOGY (CSO 2)**EXOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.1)**

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA079870	Bolton, Judy	Carcinogenic Metabolites Formed from Antiestrogen
2.	R21	CA143248	Kratz, Mario	Adipose Tissue Inflammation and Estrogen Synthesis
3.	ZIA	CP010126	Brinton, Louise	GOG Studies
4.	ZIA	CP010126	Sherman, Mark	Endometrial Hyperplasia and Endometrial Cancer Nested Case-Control Study
5.	ZIA	CP010126	Wentzensen, Nicolas	Assessment of Screening Modalities for Gynecologic Cancers

ENDOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer
2.	R01	CA097097	Di Cristofano, Antonio	PTEN and the Molecular Genetics of Endometrial Cancer
3.	R01	CA128571	Merrill, Bradley	Embryonic Stem Cell Properties in Cancer
4.	R01	CA139102	Sklar, Jeffrey	Trans-Splicing of RNA in Endometrial Stroma and Other Tissues
5.	R01	CA133010	Strickler, Howard	Role of the Sex Hormones and Insulin/IGF-Axes in Endometrial Cancer Recurrence
6.	R21	CA143248	Kratz, Mario	Adipose Tissue Inflammation and Estrogen Synthesis
7.	ZIA	BC 01131	Annunziata, Christina	Molecular Characterization of Endometrial Cancer
8.	ZIA	CP010126	Brinton, Louise	GOG Studies
9.	ZIA	BC 01079	Niederhuber, John	Mechanisms of Stromal Cell Activation by the Developing Tumor
10.	ZIA	CP010126	Sherman, Mark	Endometrial Hyperplasia and Endometrial Cancer Nested Case-Control Study
11.	ZIA	CP010126	Wentzensen, Nicolas	Assessment of Screening Modalities for Gynecologic Cancers
12.	ZIA	CP010144	Wentzensen, Nicolas	Pilot Study: Collection, Analysis of Human Ovarian Surface Epithelial Cells
13.	ZIA	CP010126	Wentzensen, Nicolas	WHI Hormones and Gynecologic Cancers Study

Gynecologic Cancers Portfolio Analysis

**Uterine Cancer
Etiology (CSO 2), cont.**

INTERACTIONS OF GENES AND/OR GENETIC POLYMORPHISMS WITH EXOGENOUS AND/OR ENDOGENOUS FACTORS (CSO 2.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	ZIA	CP010126	Wentzensen, Nicolas	WHI Hormones and Gynecologic Cancers Study

RESOURCES AND INFRASTRUCTURE RELATED TO ETIOLOGY (CSO 2.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA097097	Di Cristofano, Antonio	PTEN and the Molecular Genetics of Endometrial Cancer
2.	ZIA	CP010126	Wentzensen, Nicolas	Pilot: Silent Markers in Endometrial and Ovarian Tissue
3.	ZIA	CP010126	Wentzensen, Nicolas	Polish Gynecologic Cancer Case-Control Study
4.	ZIE	BC 01113	Kohn, Elise	The CCR/Walter Reed Army Medical Center Gynecologic Cancer Program Research Lab

PREVENTION (CSO 3)

INTERVENTIONS TO PREVENT CANCER: PERSONAL BEHAVIORS THAT AFFECT CANCER RISK (CSO 3.1)

No projects.

NUTRITIONAL SCIENCE IN CANCER PREVENTION (CSO 3.2)

No projects.

CHEMOPREVENTION (CSO 3.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers
2.	R01	CA079870	Bolton, Judy	Carcinogenic Metabolites Formed from Antiestrogen

Gynecologic Cancers Portfolio Analysis

**Uterine Cancer
Prevention (CSO 3), cont.**

VACCINES (CSO 3.4)

No projects.

COMPLEMENTARY AND ALTERNATIVE PREVENTION APPROACHES (CSO 3.5)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO PREVENTION (CSO 3.6)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS (CSO 4)

TECHNOLOGY DEVELOPMENT AND/OR MARKER DISCOVERY (CSO 4.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R21	CA143331	Meade, Thomas	Progesterone Contrast Agents for MRI
2.	R21	CA155674	Zigheboim, Israel	ATR Mutation in Endometrial Cancer
3.	ZIE	BC 01113	Kohn, Elise	The CCR/Walter Reed Army Medical Center Gynecologic Cancer Program Research Lab

**TECHNOLOGY AND/OR MARKER EVALUATION WITH RESPECT TO FUNDAMENTAL
PARAMETERS OF METHOD (CSO 4.2)**

No projects.

TECHNOLOGY AND/OR MARKER TESTING IN A CLINICAL SETTING (CSO 4.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer

Uterine Cancer
Early Detection, Diagnosis, and Prognosis (CSO 4), cont.

RESOURCES AND INFRASTRUCTURE RELATED TO DETECTION, DIAGNOSIS, OR PROGNOSIS (CSO 4.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K24	CA125036	Smith-Bindman, Rebecca	Risk of Cancer in Incidental Findings Identified on Ultrasound Imaging
2.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer
3.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers
4.	ZIA	CP010126	Wentzensen, Nicolas	Polish Gynecologic Cancer Case-Control Study

TREATMENT (CSO 5)

LOCALIZED THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.1)

No projects.

LOCALIZED THERAPIES: CLINICAL APPLICATIONS (CSO 5.2)

No projects.

SYSTEMIC THERAPIES: DISCOVERY AND DEVELOPMENT (CSO 5.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer
2.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers
3.	R01	CA148747	Cliby, William	Targeting the Mullerian Inhibiting Substance Pathway in Gynecologic Cancer
4.	R01	CA099908	Leslie, Kimberly	Targeted Therapy for Endometrial Cancer

SYSTEMIC THERAPIES: CLINICAL APPLICATIONS (CSO 5.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K23	CA143154	Bae-Jump, Victoria	Metformin as a Novel Chemotherapeutic Strategy for the Treatment of Endometrial Cancer
2.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer

Gynecologic Cancers Portfolio Analysis

Uterine Cancer

Treatment: Systemic therapies: Clinical applications (CSO 5.4), cont.

No.	Mech	Project #	Principal Investigator	Project Title
3.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers

COMBINATIONS OF LOCALIZED AND SYSTEMIC THERAPIES (CSO 5.5)

No projects.

COMPLEMENTARY AND ALTERNATIVE TREATMENT APPROACHES (CSO 5.6)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO TREATMENT AND THE PREVENTION OF RECURRENCE (CSO 5.7)

No.	Mech	Project #	Principal Investigator	Project Title
1.	P50	CA134254	Goodfellow, Paul	SPORE in Endometrial Cancer
2.	P50	CA098258	Lu, Karen	M.D. Anderson Gynecologic SPORE for Uterine Cancers

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6)

PATIENT CARE AND SURVIVORSHIP ISSUES (CSO 6.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K01	CA154938	Ceballos, Rachel	Addressing Psychosocial Disparities in Rural Hispanic Cancer Survivors
2.	R01	CA162139	Barakat, Richard	The Lymphedema and Gynecologic Cancer (LEG) Study: Incidence, Risk Factors, and Impact
3.	R01	CA129766	Dor, Avi	Pricing of Major Cancer Surgeries: Impact of Insurance, Outcomes, and Severity
4.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors
5.	R01	CA138808	Pereira, Deidre	Cognitive Behavioral Effects on Sleep, Pain, and Cytokines in Gynecologic Cancer

Gynecologic Cancers Portfolio Analysis

Uterine Cancer
Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

SURVEILLANCE (CSO 6.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K24	CA125036	Smith-Bindman, Rebecca	Risk of Cancer in Incidental Findings Identified on Ultrasound Imaging
2.	R01	CA162139	Barakat, Richard	The Lymphedema and Gynecologic Cancer (LEG) Study: Incidence, Risk Factors, and Impact
3.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors

BEHAVIOR (CSO 6.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K05	CA092002	Weiss, Noel	Mentoring and Research in Cancer Epidemiology

COST ANALYSIS AND HEALTH CARE DELIVERY (CSO 6.4)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA129766	Dor, Avi	Pricing of Major Cancer Surgeries: Impact of Insurance, Outcomes, and Severity

EDUCATION AND COMMUNICATION (CSO 6.5)

No.	Mech	Project #	Principal Investigator	Project Title
1.	T32	CA009515	Appelbaum, Frederick	Training in Cancer Biology and Transplantation
2.	T32	CA101642	Bodurka, Diane	Training of Academic Gynecologic Oncologists

END-OF-LIFE CARE (CSO 6.6)

No projects.

ETHICS AND CONFIDENTIALITY IN CANCER RESEARCH (CSO 6.7)

No projects.

COMPLEMENTARY AND ALTERNATIVE APPROACHES FOR SUPPORTIVE CARE OF PATIENTS AND SURVIVORS (CSO 6.8)

No projects.

Gynecologic Cancers Portfolio Analysis

Uterine Cancer

Cancer Control, Survivorship, and Outcomes Research (CSO 6), cont.

RESOURCES AND INFRASTRUCTURE RELATED TO CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6.9)

No.	Mech	Project #	Principal Investigator	Project Title
1.	K05	CA092002	Weiss, Noel	Mentoring and Research in Cancer Epidemiology

SCIENTIFIC MODEL SYSTEMS (CSO 7)

DEVELOPMENT AND CHARACTERIZATION OF MODEL SYSTEMS (CSO 7.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA137181*	Castrillon, Diego	Mouse Models and Translational Studies of Endometrial Cancer
2.	R01	CA137181	Castrillon, Diego	Mouse Models and Translational Studies of Endometrial Cancer
3.	R01	CA152667	Kodell, Ralph	Individualizing Cancer Predictions via Selective Voting in Convex-Hull Ensembles
4.	R01	CA119232	Wilson, Bridget	MSM Mapping and Modeling ErbB Receptor Membrane Topography

APPLICATION OF MODEL SYSTEMS (CSO 7.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA152667	Kodell, Ralph	Individualizing Cancer Predictions via Selective Voting in Convex-Hull Ensembles
2.	U01	CA141576	Castrillon, Diego	LKB1 Tumor Suppressor and Human Cancer

RESOURCES AND INFRASTRUCTURE RELATED TO SCIENTIFIC MODEL SYSTEMS (CSO 7.3)

No projects.

VAGINAL CANCER PROJECTS

BIOLOGY (CSO 1)

NORMAL FUNCTIONING (CSO 1.1)

No projects.

CANCER INITIATION: ALTERATIONS IN CHROMOSOMES (CSO 1.2)

No projects.

CANCER INITIATION: ONCOGENES AND TUMOR SUPPRESSOR GENES (CSO 1.3)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA154358	Kurita, Takeshi	Molecular Etiology of Cervicovaginal Adenosis by In Utero Hormone Exposure

CANCER PROGRESSION AND METASTASIS (CSO 1.4)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO BIOLOGY (CSO 1.5)

No projects.

ETIOLOGY (CSO 2)

EXOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA154358	Kurita, Takeshi	Molecular Etiology of Cervicovaginal Adenosis by In Utero Hormone Exposure

Vaginal Cancer
Etiology (CSO 2), cont.

ENDOGENOUS FACTORS IN THE ORIGIN AND CAUSE OF CANCER (CSO 2.2)

No projects.

INTERACTIONS OF GENES AND/OR GENETIC POLYMORPHISMS WITH EXOGENOUS AND/OR ENDOGENOUS FACTORS (CSO 2.3)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO ETIOLOGY (CSO 2.4)

No projects.

PREVENTION (CSO 3)

No projects.

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS (CSO 4)

No projects.

TREATMENT (CSO 5)

No projects.

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6)

PATIENT CARE AND SURVIVORSHIP ISSUES (CSO 6.1)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors

SURVEILLANCE (CSO 6.2)

No.	Mech	Project #	Principal Investigator	Project Title
1.	R01	CA133069*	Freeman, Jean	Late Effects of Radiation in Older Gynecologic Cancer Survivors

BEHAVIOR (CSO 6.3)

No projects.

COST ANALYSIS AND HEALTH CARE DELIVERY (CSO 6.4)

No projects.

EDUCATION AND COMMUNICATION (CSO 6.5)

No projects.

END-OF-LIFE CARE (CSO 6.6)

No projects.

ETHICS AND CONFIDENTIALITY IN CANCER RESEARCH (CSO 6.7)

No projects.

COMPLEMENTARY AND ALTERNATIVE APPROACHES FOR SUPPORTIVE CARE OF PATIENTS AND SURVIVORS (CSO 6.8)

No projects.

RESOURCES AND INFRASTRUCTURE RELATED TO CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH (CSO 6.9)

No projects.

SCIENTIFIC MODEL SYSTEMS (CSO 7)

No projects.