

The following protocol information is provided solely to describe how the authors conducted the research underlying the published report associated with the following article:

**Project Connect Online: Randomized trial of an internet-based program to chronicle the cancer experience and facilitate communication**

**Stanton, et al**

DOI: 10.1200/JCO.2012.46.9015

The information provided may not reflect the complete protocol or any previous amendments or modifications. As described in the Information for Contributors (<http://jco.ascopubs.org/site/ifc/protocol.xhtml>) only specific elements of the most recent version of the protocol are requested by JCO. The protocol information is not intended to replace good clinical judgment in selecting appropriate therapy and in determining drug doses, schedules, and dose modifications. The treating physician or other health care provider is responsible for determining the best treatment for the patient. ASCO and JCO assume no responsibility for any injury or damage to persons or property arising out of the use of these protocol materials or due to any errors or omissions. Individuals seeking additional information about the protocol are encouraged to consult with the corresponding author directly.

***Title of Research Project***

Project Connect Online: Enhancing Connections During Breast Cancer

***Scientific Abstract***

**Background:** Although social support is a vital contributor to well-being in women with breast cancer, few interventions have targeted women's communication with their social network (other than the marital relationship). The proposed research is designed to develop a pathway for aiding women with breast cancer to manage communication. Specifically, we will develop and provide a first test of Project Connect, a program for women with breast cancer to design personal web pages to chronicle their experience and communicate with important others.

**Objective/Hypotheses:** Our objective is to conduct three studies to develop and test Project Connect. The major hypothesis (Study 3) is that, compared to a standard care control, women who create web pages will demonstrate improved depressive symptoms, mood, cancer-related intrusive thoughts, and perceived cancer-related benefits. Mechanisms to be examined are self-efficacy for managing cancer, cancer-related emotional expression, and social support.

**Specific Aims:** The aims are to: (1) examine the experience of women with breast cancer who have developed personal web pages to identify potentially effective contents and consequences of this approach; (2) examine preferences for and facilitators/barriers to creating web pages in focus groups of breast cancer patients; (3) conduct a randomized, controlled preliminary study of feasibility and efficacy of Project Connect, a program for teaching women to design web pages to chronicle their experience with breast cancer and communicate with others.

**Study Design:** The three research phases correspond to the aims. First, we will conduct interviews with 8 women who have developed web pages to communicate with others about their cancer experience, querying web page content/functions and consequences of web page use. Second, we will conduct focus groups of 6-8 women with breast cancer to explore preferences for web page contents/functions and facilitators/barriers in their development. Third, we will randomly assign 66 [note: 88 randomized owing to additional resources available] women in treatment for breast cancer to Project Connect, a program to teach web page development/use, or to a standard care control. Prior to and 1 month and 6 months after randomization, we will assess perceived self-efficacy in managing the cancer experience, emotional expression, social support, depressive symptoms, mood, cancer-related intrusive thoughts, and perceived cancer-related benefits.

**Potential Outcomes and Benefits:** Most interventions to improve social support for women with breast cancer have involved the spouse or groups of breast cancer patients. To our knowledge, this is the first intervention directed toward optimizing supportive responses from friends and family, groups who can provide crucial support. Carefully grounded in theory and research, our ultimate goal is to promote the well-being of women who confront breast cancer and of those who care for them. Assuming supporting data on the feasibility and efficacy of Project Connect, a larger trial will be conducted to refine and enhance the intervention.

***A. Background***

Most commonly, breast cancer is not experienced by the woman (or man) in isolation, but rather by the woman within a nexus of loved ones and friends. Supportive relationships serve as crucial buffers for the stresses accompanying breast cancer, whereas the experience of social constraint

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

or isolation bodes ill for adjustment. Communication with the social network can pose challenges both for the individual who confronts breast cancer and for supportive others. The woman with breast cancer may want to keep others apprised of her status, but may lack the energy to do so, or she may fear becoming a burden. At the same time, friends and family want to be supportive, but may not know how to offer effective support or may have the concern that frequent contact might be taxing. Close others also are likely to have a strong need for information regarding the woman's well-being, but might hesitate to ask questions that could be perceived as intrusive. The proposed research is designed to develop a pathway for aiding women with breast cancer to manage communication during breast cancer treatment and recovery. Specifically, we will develop and pilot Project Connect, a program for women with breast cancer to design personal web pages in order to chronicle their experience and communicate with their social network.

### **D1. The Importance of Interpersonal Relationships in Adjustment to Breast Cancer**

Social support, defined as the perception and experience that one is cared for by others, esteemed, and part of a social network of mutual assistance (1), is an important contributor to adjustment in women with breast cancer (2). To offer a few of many evidentiary examples, xxx (3) found that perceived emotional support from friends prior to breast cancer surgery predicted a decrease in distress after surgery in low-income Latinas. Xxx (4) reported that perceived support assessed prior to breast cancer diagnosis predicted positive adjustment through 9 months later, controlling for demographic and other variables. A related finding is that unreceptive social environments can hamper adjustment (5-7). Moreover, social support can buffer the relations between risk factors for poor adjustment and adaptive outcomes. For example, xxx (8) reported that high support from family and friends muted the relation between unsupportive behaviors by the partner and low coping efficacy in women with breast cancer. This study is important in its illumination of the important role that friends and other family members can play in breast cancer patients' well-being, even in the face of an unsupportive partner. **Interventions designed to enhance breast cancer patients' communication with friends and family during and after treatment could provide an important resource for bolstering adjustment.**

### **D2. Questions Regarding Interpersonal Relationships and Adjustment to Breast Cancer**

Although perceived support is an established predictor of adjustment to cancer, questions remain regarding the relation between social support and adjustment. A first question is whether social support is beneficial to the extent that it is a good fit to the recipient's specific needs for support (i.e., the matching hypothesis, 9). Although infrequently examined in cancer samples, xxx (10) found that breast cancer patients' perceived misalignment of support between provider and recipient was associated with poorer adjustment. **The proposed intervention for development of personal web pages would allow the breast cancer patient to communicate her needs for support directly or to offer examples of what has been helpful to her, presumably facilitating an effective match between what is desired and what is received.**

A second question regards the mechanisms through which social support facilitates adjustment. Social support can bolster adjustment outcomes through physiological, emotional, and cognitive pathways (e.g., 11-12). A supportive context provides an opportunity to express and process painful emotions and to maintain a positive self-focus (6, 13), two mechanisms pertinent to the

proposed research. **The processes of developing a personal web page and receiving supportive responses are likely to allow the expression of emotions surrounding breast cancer to a receptive audience (14) and to increase a sense of self-efficacy in managing breast cancer through this proactive attempt to enhance communication.**

A third question involves identifying the most effective methods to enhance social support. Most interventions have been directed toward enhancing communication between the breast cancer patient and her partner/caregiver or promoting new relationships with other cancer patients. But there is some evidence that breast cancer patients report receiving greater support from friends than from their husbands (15). Further, friends and family can offset the negative effects of unsupportive behaviors by partners (8), and peer discussion groups are particularly effective for women who have unsupportive partners (16). Family and friends also desire information and support (17). **These findings suggest that interventions directed toward enhancing communication with the network of intimate others could be useful.**

### **D3. The Advent of the Internet in Cancer Communications**

The Internet rapidly has become one of the most commonly used sources of information on health and disease (18). There is evidence that breast cancer survivors' use of the Internet for gaining information about breast health issues is related to greater perceived social support and lower loneliness, particularly among African American and Latina survivors (19, 20). Interactive information and support systems, such as Gustafson's Comprehensive Health Education and Support System (CHESS) have been shown to benefit breast cancer patients (21 for a review). In addition to its informational function, the Internet has become a vehicle for augmenting emotional support in women with breast cancer, with promising quantitative (e.g., 22) and qualitative (e.g., 23, 24) findings from online breast cancer discussion groups.

Personal web page construction is of interest to cancer survivors. Indeed, the American Cancer Survivors' Cancer Survivors Network provides the opportunity to construct personal web pages including text and pictures ([www.acscsn.org/webpages/](http://www.acscsn.org/webpages/)). Examination of publicly accessible web pages suggests that they often are intended to tell one's story and to help others with cancer (e.g., <http://diane.ponpines.com/>, <http://www.freewebs.com/dancingthesun/>). One study has described the web pages of women with breast cancer. XXX (24) conducted a qualitative content analysis of 50 personal web pages, reporting that the pages often provided detailed accounts of women's experiences. They offered a way to connect with others and to help other cancer patients. Xxx suggested that the pages offered a vehicle for expressing emotion and for bolstering a sense of efficacy/control. To our knowledge, **ours is the first research to: 1) create and evaluate an intervention to teach breast cancer patients web page development; 2) focus the intervention specifically on creation of web pages to communicate with supportive others; 3) evaluate the efficacy of the intervention on important outcomes.**

**D4. Conceptual Model for the Proposed Study** Drawing from research and theory in social support, emotional expression, and adjustment to cancer, we have developed the conceptual model depicted in the figure. In their creation of a personal webpage, women with breast cancer are expected to gain in their sense of self-efficacy for managing cancer, as well as developing a vehicle for emotional expression. As they begin to receive supportive communications from

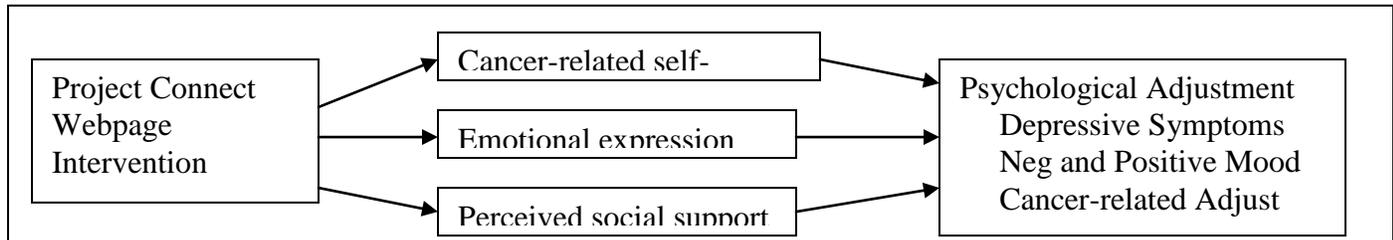
---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

those who have access to their page, perceived social support should accrue. These benefits in turn should promote well-being (i.e., diminished distress and increased well-being). The links between self-efficacy, cancer-related emotional expression, social support, and adjustment to cancer are well documented (2, 26-30). In the proposed research, we will provide a preliminary test of the effects of the intervention on each of these outcomes. Promising findings will set the stage for a larger trial to test the mediational pathways proposed in the figure, as well as potentially to refine the model to examine additional mechanisms and outcomes.



### DS. Preliminary Results

**Relevant Background Work of the Investigators.** The Principal Investigator (PI) has extensive applied experience as a clinical health psychologist with women diagnosed with breast cancer and their close others, working clinically with these groups over the past 20 years. As a practicing medical oncologist and Associate Director of the xxx medical group, which operates four breast cancer care centers, Dr. xxx will offer considerable clinical expertise as a collaborator on this project, and successful recruitment is occurring at the centers for another of the PI's studies. Xxx, a website development firm, has worked successfully with Dr. xxx's medical group and other medical practices to construct their websites.

The PI also has extensive experience in assessment of parameters relevant to the proposed research and documentation of their importance in breast cancer. She has a long history of **research on determinants of psychological and physical health in breast cancer patients**. Particularly pertinent to this trial are findings from her longitudinal and experimental research regarding salutary effects of cancer-related emotional expression in breast cancer patients (29, 30). Her research also documents the important role of social support in adjustment (31-33). Further, in a study of finding benefit in adversity (31), 83% of 92 breast cancer patients reported finding at least one benefit in their cancer experience. By far the most frequently cited benefit was enhanced relationships with others. Finally, the PI has conducted **clinical trials of psychosocial interventions** with breast cancer patients (30, 35).

**A Pilot Survey to Assess Interest in Project Connect.** In November of 2005, we conducted a pilot survey to assess interest in Project Connect among women with breast cancer at the xxx medical group. Any patient diagnosed with breast cancer seen at the clinics during the pilot was eligible. Of the 68 respondents (2 declined), 82% reported having convenient Internet access, and 78% reported high-speed access. Internet use at least weekly was reported by 69%, and only 14% never used the Internet. (Note that these data are similar to national 2006 data indicating that 73% of adult U.S. women use the Internet [www.pewinternet.org], with most having home access, as well as to data from a multiethnic public hospital oncology sample with relatively low education (36), in which 71% reported internet access.) Of the 68 women, 70% reported interest

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

in attending a program to learn how to build a personal web page, and 28% reported that a loved one might be interested in attending.

In sum, **our previous and ongoing work uniquely prepares us for the proposed research.**

First, we have participated in the empirical and theoretical development that undergirds the proposed study. Second, we have demonstrated the ability to recruit breast cancer patients for research participation. Third, we have expertise in the methodologies and outcomes proposed. Fourth, we have investigated determinants of psychological and physical health in breast cancer patients and have conducted clinical trials directed toward improving these outcomes. Fifth, we have documented both breast cancer patients' adequate Internet access and significant interest in the proposed intervention. Thus, the proposed study builds directly on our previous work. Although research has revealed robust relations of social support, emotional expression, self-efficacy, and adjustment to breast cancer, few interventions have been tested to enhance these parameters through promoting communication with friends and family (other than the intimate partner). Grounded in established research and theory, the proposed intervention has the potential to facilitate communication with others who can provide vital sources of support, whether they are located nearby or in remote locations.

### ***B. Objective/Hypothesis***

Our objective is to conduct three studies to develop and test Project Connect. The primary hypothesis is that, relative to women assigned to a standard care control, women who use a personal web page will demonstrate enhanced cancer-related self-efficacy, increased cancer-related emotional expression and social support, improved depressive symptoms, mood, and cancer-related adjustment.

### ***C. Specific Aims***

**Aim 1:** Examine the experience of women with breast cancer who have developed personal web pages to identify potentially effective contents and explore consequences of this approach.

**Aim 2:** Examine perceived barriers, facilitators, and preferences for creating web pages in focus groups of breast cancer patients.

**Aim 3:** Conduct a randomized, controlled pilot study of the feasibility and efficacy of Project Connect, a program for teaching women to design personal web pages to chronicle their experience with breast cancer and communicate with their social network.

### ***D. Study Design***

The research will be conducted in three phases:

**G1. Phase One: Interviews with Breast Cancer Survivors Who Have Created Personal Web Pages - Participants and procedures.** Through referrals from the xxx medical group and additional established referral sites of the Principal Investigator (PI), the PI and her assistant (trained by the PI) will conduct in-person interviews with at least 8 women who have developed personal web pages to communicate with loved ones about breast cancer. These one- to two-hour interviews will be semi-structured, focusing on three domains: logistics of web page development, content (e.g., photos, journal, support requests) and intended functions (e.g., chronicle experience, gain support) of web pages, consequences of web page development and use. With participants' permission, interviews will be taped and transcribed. Further, women will

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

be queried for permission for the researchers to view their web pages and for their use as examples for participants in Phases 2 and 3. We already have secured enthusiastic willingness to participate from two women who have created personal web pages to communicate with loved ones about their experience with breast cancer.

**Data analysis.** We will conduct content analysis (37) and frequency counts on interview data to identify: (1) themes of logistics of webpage development (e.g., primary phase in the cancer trajectory of web page use); (2) commonly endorsed functions of web pages and specific content serving each function (e.g., express emotions through on-going web page journal); (3) any perceived positive (e.g., increased emotional support) and negative (e.g., feeling of obligation to others) consequences of web page use. These data will help us to: (1) anticipate logistical issues in web page development; (2) generate examples of functions and associated content of web pages for Phases 2 and 3; (3) specify perceived benefits of web page use, in order to refine our hypothesis regarding outcomes of the Phase 3 trial; and (4) identify any problematic consequences of web page use, in order to attempt proactively to offset them in Phase 3.

**G2. Phase Two: Focus Groups with Interested Breast Cancer Patients - Participants and procedures.** From xxx medical group referrals, we will compose focus groups of 6-8 women (38) who are interested in web page development in order to discuss preferences for and perceived barriers to such development (see Phase 3 for documentation of feasibility of accrual). We wish to conduct focus groups of women naïve to web page creation because their preferences and perceived facilitators/barriers might be distinct from those of Phase 1 participants. To the extent possible, focus groups will reflect the epidemiology of the disease (e.g., age, ethnicity). Centered on 4 to 6 targeted questions and lasting approximately 90 minutes (38), focus groups will be conducted by the PI and her trained assistant. Targeted questions will be followed by exposure to sample web pages, for reaction and discussion. Focus groups will be audiotaped for content analysis by the research team, including website designer xxx. Any participant who is interested in developing a personal web page will be offered a small-group session to teach her to do so, which will serve as a pilot for Phase 3 (maximum  $n = 16$ ).

**Data analysis.** We will conduct content analysis (37) on the focus group data to identify: (1) themes in preferred web page content and functions; (2) perceived barriers to and facilitators of web page development; (3) preferences for Project Connect intervention format and content. These data will be used in developing the Project Connect intervention, which will be piloted with interested Phase 2 participants prior to the initiation of Phase 3.

**G3. Phase Three: Pilot Randomized, Controlled Intervention Trial of Project Connect** Participants will be 66 women [note: sample size increased to 88] in treatment for invasive breast cancer by the xxx medical group. Eligible and consenting participants will be randomized to the Project Connect intervention or to a standard care control condition. Dependent variables, to be assessed at baseline prior to the intervention and at a one-month and six-month follow-up, are depressive symptoms, mood, cancer-related intrusive thoughts, and perceived cancer-related benefits (e.g., life appreciation, strengthened relationships). Self-efficacy for managing cancer, cancer-related emotional expression, and perceived social support will be assessed as potential mechanisms. Timing of follow-up assessments were selected to capture early effects of creating

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

and using the web page (one month; assessment of mechanisms) as well as longer-term effects once women have used the webpage throughout their medical treatment (6 months).

**Accrual plan.** Eligibility criteria include: (1) women (men constitute less than 1% of breast cancer cases) with a confirmed first diagnosis of invasive breast cancer (any stage) in treatment at the xxx medical group breast cancer clinics; (2) can complete assessment/intervention in English; (3) provides informed consent. The intention is to target patients in treatment with chemotherapy or radiotherapy because our experience suggests that it is during this period that they and their loved ones have the most intense communication needs, but we will be responsive to the Phase 1 and 2 data in shaping our sample as warranted [Note: based on Phase 1 and 2 data, we allowed entry of women in medical treatment or not and examined this variable as a moderator.]. Because communication needs cut across patients with all stages of cancer, we will allow participants with any stage in this pilot and will examine data for pattern of effects as a function of stage [e.g., metastatic or nonmetastatic].

**Enrollment.** Consecutive potential participants will be introduced to the trial prior to the initiation of chemotherapy/radiotherapy by the research coordinator, following a standard verbal script. [Note: As explained above, women not in current medical treatment allowed.] Treating physicians will be unaware of patients' study participation. We have successfully recruited breast cancer patients in the early diagnostic and treatment phase in other research (32,33). With consent, the research coordinator will provide contact information to the research staff, who will call interested women to describe the research further and confirm eligibility. Participants will be mailed a packet containing an informed consent form and baseline questionnaires, which they will return by mail within one week. When the baseline questionnaire packet is returned, a biostatistician in the xxx will randomly assign each participant to the intervention or control condition, whereupon the participant will be called by research staff to schedule her intervention session in the next week.

**Sample size.** We will seek a sample of 50 participants who complete all assessments. We estimate that at least 75% of the sample will complete the 6-month follow-up, based on our previous psychosocial intervention trials, in which 95% of consenting women completed a 3-month follow-up in one trial (30), and 75% completed a 6-month follow-up in another trial (35). Thus, we will enroll 66 participants to attain a final sample of 50. Because this is a pilot trial, effect sizes associated with the intervention will be of most interest. A sample size of 25 participants per condition ( $n = 50$ ) will be sufficient for detecting a large effect ( $d = .80$ ; 39). In the case of this pilot trial, effect sizes approaching  $d = .50$  (a moderate effect; 39) will be considered sufficiently promising to pursue performance of a larger trial. [Note: 88 women were randomized.]

XXX practice data indicate that approximately 600 new invasive breast cancer patients underwent chemotherapy/radiation at the clinics in 2005. Thus, approximately 50 patients begin adjuvant treatment per month. Based on the level of interest expressed in our pilot study and psychosocial intervention participation rates in other studies (e.g., 33% to over 50%; 35, 40-42), we conservatively estimate that 30% of this group will participate (15 per month). Thus, we expect successful recruitment of the targeted sample of 66 participants in approximately five months, although we will allow seven months to ensure successful recruitment.

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

**Standard care control.** Patients will complete the baseline and follow-up assessments and otherwise receive standard medical care. A full-time psychotherapist is on staff at xxx medical practice to provide services as requested by patients or referred by medical personnel.

**Intervention.** Informed by findings of Phases 1 and 2, the PI and website firm will develop a flexible web page design that allows for personalization with regard to aesthetics and choice of functions. Conducted by the PI and her assistant, the intervention will be delivered in groups of two to four women in the xxx research suite. We anticipate that some women will want to bring a loved one for help in managing the site, and this will be allowed (and examined in analyses). The small group approach will allow hands-on access to computers, offer a more efficient and transportable intervention than would individually administered sessions, and promote sharing of ideas regarding web page functions and content. Estimated to take four hours, the intervention, accompanied by a take-home manual, will involve: (a) description and discussion of potential functions of personal web pages; (b) display of several example web pages constructed by Phase 1 and 2 participants and shared with their permission; (c) individual selection of specific functions and content; (d) hands-on creation of web page content. The researchers will be available by email and phone for continued consultation as participants manage their web pages (and such contact will be recorded). In addition to participants being able to manage their web pages at home or publicly accessible sites (e.g., public library), a private room with internet access will be available during oncology clinic hours for participants to update their web pages as they come in for treatment or at other times (and this will be recorded). Web pages will be created through the xxx medical practice server, with website addresses provided to women. Template pages and a content management system, including the ability to input text and images and to communicate with others via email, will be offered such that no knowledge of programming language or technical details are required. Informed by Phase 1 and 2 findings, anticipated content categories include an on-going journal of the participant's experience, a section for photographs, a feature for specifying how others can be helpful, and a mechanism for posting personal messages to the participant. For those who elect it, web pages can be set up to be password-protected, such that access can be granted only to designated others.

**Baseline and follow-up assessments.** At baseline and the two follow-ups, participants will complete the Profile of Mood States (43), a measure often used in research with cancer patients, which form reliable indicators of **positive and negative mood** (29, 33). They also will complete the Center for Epidemiological Studies-Depression scale (CES-D; 44), a measure of **depressive symptoms**, the Impact of Event Intrusion subscale to assess cancer-related **intrusive thoughts** and feelings (IES-Intrusion; 45), and the Posttraumatic Growth Inventory (45), a measure of perceived **cancer-related benefits** (Life Appreciation and Strengthened Relationships subscales of particular interest). Coping through **emotional processing and expression** will be assessed with the Emotional Approach Coping scales (46, 47), completed with reference to survivors' current experience of breast cancer. **Perceived social support** will be assessed with items used by xxx (3) in their study of breast cancer patients. This measure has the advantage of assessing both emotional and instrumental support and being directed toward specific targets (in this case friends, partner, and family other than partner). We will include items to assess perceived match between offered and desired support (9, 10). **Cancer-related self-efficacy** will be measured with

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

subscales (i.e., Getting Needs Met and Choosing Coping Strategies) from the Measure of Current Status (MOCS; 28). Participants rate how well they can perform each behavior with regard to “how you respond to challenges and demands associated with your experience of breast cancer.” Researcher-constructed questions regarding **use and perceived consequences of the personal web page** also will be administered. In addition, **demographic (e.g., age, education) and cancer-related** (e.g., stage, date of diagnosis, treatment) will be assessed, as will **content categories of participants’ personal web pages**. Informed by Phases 1 and 2, other measures will be added as warranted. **Web page use data** will be recorded, such as number of hits on the web page, number of message sent by visitors to the page, and online survey questions for web page visitors regarding reactions to the web page (e.g., utility of content).

**Data analysis.** After preliminary analysis for group equivalence on baseline variables, primary analyses will be analyses of covariance (baseline values on dependent variables), with condition (intervention versus control) as the independent variable, on dependent variables. [Note: with the inclusion of women in and not in current medical treatment, this variable was examined as a moderator.] Intent to treat analyses will be conducted, with missing data imputation, if warranted. Effect sizes will be examined to identify those approaching a moderate effect ( $d = .50$ ). Given supportive findings, preliminary mediational analyses (48) to examine the conceptual model also will be conducted. Exploratory analyses will be performed to assess whether intervention effects vary as a function of web page characteristics (e.g., particular content categories), visitor use data (e.g., number of web page hits) and whether a significant other was involved in web page development, as well as demographic (e.g., age) and cancer-related (e.g., treatment received) variables.

### **G4. Strengths and Potential Concerns**

To our knowledge, the proposed research represents the first experimental test of an innovative and transportable intervention for facilitating communication during the experience of breast cancer, guided by a careful developmental process. Several questions will remain, however, including: (1) effects of access to the personal web page on family and friends, as well as reciprocal effects between breast cancer survivors and network members; (2) given cultural nuances in social support processes (e.g., 15, 49), ethnic/cultural variation in effects; (3) effects of the intervention on other outcomes (e.g., physical health); (4) comparative effects of the intervention versus other communication-enhancing interventions (e.g., online support groups) and more stringent control conditions (e.g., attention control to control for four hours of group exposure); (5) generalizability of effects to diverse groups and settings, including effective methods to promote access to underserved groups. Given promising findings, we will seek external funding to pursue these questions in programmatic research.

### ***E. Potential Outcomes***

The research is consistent with calls of cancer advocates (e.g., [www.canceradvocacy.org](http://www.canceradvocacy.org)) to promote evidence-based interventions. Immediate benefits may accrue to the breast cancer survivors involved in Project Connect with regard to improved social support, cancer-related self-efficacy, and mood. If Project Connect shows promise, then long-term outcomes include the

---

## PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

refinement and dissemination of an evidence-based intervention to bolster communication and well-being in breast cancer survivors and their loved ones.

### ***F. Timeline***

Months 1 and 2 will be devoted to finalizing interviews and assessment protocols, PI's training of the research assistant, and identifying potential Phase 1 participants. Conduct and analysis of Phase 1 interviews will occur in Months 3-4, and of the Phase 2 focus groups will occur in Months 5-6. Creation of the take-home manual, finalization, and piloting of the intervention will occur in Months 7-9. Recruitment for and performance of the Phase 3 intervention will occur in Months 10 through 16, with final follow-up assessments and data entry completed in Month 22. Months 23 and 24 will be devoted to data analysis and beginning dissemination of findings.

### ***G. Dissemination Plan***

Dissemination will occur through publications (e.g., *Journal of Clinical Oncology*, *Health Psychology*) and presentations to breast cancer advocacy groups (e.g., Komen Mission Conference, Young Survival Coalition) and to the scientific community (e.g., American Society of Clinical Oncology, Society of Behavioral Medicine). The Project Connect intervention can be shared readily through access to the take-home manual and web page prototypes through a partnership with an existing cancer advocacy organization's website, as well as dissemination through community and hospital-based oncology clinics, which will be a future goal.

### ***H. Resubmission Statement (If applicable. Do not exceed 2 additional pages)***

#### ***I. References (Not included in page limit. Do not exceed two additional pages.)***

1. xxx (1991). Social support and interpersonal relationships. In xxx (Ed.), *Review of personality and social psychology: Prosocial behavior*. Vol 12, Sage.
2. xxx (1996). Social support and adjustment to cancer. *Health Psychology*, 15, 135-148.
3. xxx (2001). An exploratory study of social support, distress, and life disruption among low-income Hispanic women under treatment for early stage breast cancer. *Health Psychology*, 20.
4. xxx (2002). Early psychological adjustment in breast cancer patients: A prospective study. *Journal of Psychosomatic Research*, 53, 1123-1130.
5. xxx (2001). Posttraumatic growth following breast cancer. *Health Psychology*, 20, 176-185.
6. xxx (2001). A social-cognitive processing model of emotional adjustment to cancer. In xxx (Eds.), *Psychosocial interventions for cancer* (pp. 99-116). Washington, DC: APA.
7. xxx (2004). The role of social and dispositional variables associated with emotional processing in adjustment to breast cancer: An internet-based study. *Health Psychol*, 23, 259-266.
8. xxx (2003). Buffering effects of family and friend support on associations between partner unsupportive behaviors and coping among women with breast cancer. *J Soc Pers Rel*, 20, 771-92.
9. xxx (1990). Type of social support and specific stress: Toward a theory of optimal matching. In xxx (Eds.), *Social support: An interactional view* (pp. 319-366). NY: Wiley.
10. xxx (2004). Mismatches in social support and psychosocial adjustment to breast cancer. *Health Psychology*, 23, 425-430.
11. xxx (2000). Social support and salivary cortisol in women with metastatic breast cancer. *Psychosomatic Medicine*, 62, 337-345.
12. xxx (2001). Social networks and social support. In xxx (Eds.), *Handbook of health psychology* (pp. 139-173). Mahwah, NJ: Lawrence Erlbaum Associates.

---

PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

13. xxx (2002). Emotional expression, expressive writing, and cancer. In xxx (Eds.). *The writing cure* (pp. 31-51). Washington, DC: American Psychological Association.
14. xx(2004).Illness and empowerment:Writing and reading breast cancer in cyberspace. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 8, 33-59.
15. xxx (1999). An exploratory study of social support: A cross-cultural comparison of Chinese-, Japanese-, and Anglo-American breast cancer patients. *Psycho-Oncology*, 8, 207-219.
16. xxx (2000). Group support interventions for women with breast cancer: Who benefits from what? *Health Psychology*, 19, 107-114.
17. xxx (2002). Telephone counseling in psychosocial oncology: A report from the Cancer Information and Counseling Line. *Patient Education and Counseling*, 46, 267-275.
18. xx (2000). The online health care revolution: How the Web helps Americans take better care of themselves. Pew Internet and American Life Project; November 2000. www.xxx
19. xxx (2002). Internet use and social support in women with cancer. *Health Psych*, 21, 398-04.
20. xxx (2003). Racial/ethnic differences and potential psychological benefits in use of the Internet by women with breast cancer. *Psycho-Oncology*, 12, 107-117.
21. xxx (2006). How underserved breast cancer patients use and benefit from ehealth programs: Implications for closing the digital divide. *American Behavioral Scientist*, 49, 823-834.
22. xxx (2005). Randomized pilot of self-guided internet coping group for women with early-stage breast cancer. *Annals of Behavioral Medicine*, 30, 54-64.
23. xxx (2005). Online interaction. Effects of storytelling in an internet breast cancer support group. *Psycho-Oncology*, 14, 211-220.
24. xxx (2005). Internet community group participation: Psychosocial benefits for women with breast cancer. *Journal of Computer-Mediated Communication*,10(4), article 5. [25-number error]
26. xxx (2002). Barriers to information access, perceived health competence, and psychosocial health outcomes: Test of a mediation model in a breast cancer sample. *Pt Educ Coun*, 47, 37-46.
27. xxx (2001). Self-efficacy for coping with cancer: Revision of the Cancer Behavior Inventory (Version 2.0). *Psycho-oncology*, 10, 206-217
28. xxx (2003). Perceived stress management skill mediates the relationship between optimism and positive mood following radical prostatectomy. *Health Psychology*, 22, 220-222.
29. xxx (2000). Emotionally expressive coping predicts psychological and physical adjustment to breast cancer. *Journal of Consulting and Clinical Psychology*, 68, 875-882.
30. xxx (2002). Randomized, controlled trial of written emotional expression and benefit-finding in breast cancer patients. *Journal of Clinical Oncology*, 20, 4160-4168.
31. xxx (2003).The Yellow Brick Road and the Emerald City: Benefit-finding, positive reappraisal coping, and posttraumatic growth in women with early-stage breast cancer. *Health Psychology*, 22, 487-497.
32. xxx (2002). The first year after breast cancer diagnosis: Hope and coping strategies as predictors of adjustment. *Psycho-Oncology*, 11, 93-102.
33. xxx (1993). Coping with a breast cancer diagnosis: A prospective study. *Health Psychology*, 12, 16-23. [34. number error]
35. xxx (2005). Outcomes from the Moving Beyond Cancer psychoeducational, randomized, controlled trial with breast cancer patients. *Journal of Clinical Oncology*, 23, 6009-6018.
36. xxx (2005). Utility of two cancer organization websites for a multiethnic, public hospital oncology population: Comparative cross-sectional survey. *J of Medical Internet Research*, 7.

---

PROPOSAL NARRATIVE

Do NOT include any *identifying information* about the applicant. Do NOT exceed 10 Pages for Sections A-J.

---

37. xxx (2004). *Qualitative inquiry and research design*. Thousand Oaks, CA: Sage.
38. xxx (1998). *The handbook for focus group research* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
39. xxx (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
40. xxx (2005). Couple-focused group intervention for women with early stage breast cancer. *JCCP*, 73, 634-46.
41. xxx (2005). Cognitive and affective determinants of decisions to attend a group psychosocial support program for women with breast cancer. *Psychosomatic Medicine*, 67, 584-589.
42. xxx (2004). Psychological, behavioral, and immune changes after a psychological intervention: a clinical trial. *Journal of Clinical Oncology*, 22, 3570-3580.
43. xxx (1971). *EITS manual for the Profile of Mood States*. San Diego, CA: EITS.
44. xxx (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401.
45. xxx (1979). Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine*, 41, 209-218.
45. xxx The posttraumatic growth inventory. *Journal of Traumatic Stress*, 9, 455-471.
46. xxx (1994). Coping through emotional approach: Problems of conceptualization and confounding. *Journal of Consulting and Clinical Psychology*, 66, 350-362.
47. (2000). Coping through emotional approach: Scale construc & validation. *JPSP*, 78, 1150-69.
48. xxx (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7, 83-104.
49. xxx (2004). Culture and social support: Who seeks it and why? *JPSP*, 87, 354-362.