# Exhibit 10

# UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA

IN RE: ROUNDUP PRODUCTS LIABILITY LITIGATION	
This document relates to:	
ALL ACTIONS	

MDL No. 2741 Case No. 16-md-02741-VC

# EXPERT REPORT OF DR. NABHAN IN SUPPORT OF GENERAL CAUSATION ON BEHALF OF PLAINTIFFS

### I.BACKGROUND AND QUALIFICATIONS

I am a board-certified hematologist and medical oncologist with a specialty in the diagnosis and management of patients with all types of lymphoma, including non-Hodgkin (NHL). I currently hold the position of Vice President and Chief Medical Officer of Cardinal Health Specialty Solutions, a division of Cardinal Health, Inc headquartered in Dublin, OH. Before that, I was an Associate Professor of Medicine for 3.2 years at the University of Chicago in Chicago, IL, where I was the Medical Director of the Clinical Cancer Center and the Director of the international program. I was an integral part of the lymphoid malignancies program at the University of Chicago where I spearheaded several efforts

investigating treatment of lymphomas with novel agents. The University of Chicago is one of only 41 institutions in the US that are designated by the National Cancer Institute as comprehensive since it combines state of the art clinical, basic, preventive, and epidemiological research. The Cancer Center saw 48,000 cancer visits in FY16 when I was the medical director, of which almost 6,000 cases were new. Personally, I saw almost 30 lymphoma patients weekly of whom 4-5 patients were newly diagnosed. I was a referral resource to many community oncologists in the Chicago area as well as the Midwest region where complicated cases of lymphomas were sent to me for evaluation and treatment. Many of my research presentations were featured at national and international meetings (American Society of Hematology, American Society of Clinical Oncology, European Hematology Association, and the International Lymphoma Meeting held in Lugano Switzerland every 2 years). I was, and still am, a member of the Alliance cooperative group for lymphoma where I participate in designing future research efforts in the field. In addition, and during my tenure at the University of Chicago, I was an integral member of the committee that initiated the cancer supportive care center where survivors of cancer find helpful resources in all aspects of life. Further, I led the effort that led the University of Chicago achieving the QOPI (Quality Oncology Practice Initiative) certification, which is the highest quality award from the American Society of Clinical Oncology. The QOPI certification demonstrates that a cancer center delivers the best quality for patients diagnosed with cancer.

Prior to joining the University of Chicago, I was the Chief of Oncology and Hematology at Advocate Lutheran General Hospital and the Medical Director of the Cancer Institute at that hospital, located in Park Ridge, IL. I developed cancer screening programs and led

strategic and marketing efforts at this flagship hospital of Advocate Healthcare. Lutheran General is a 620-bed community teaching hospital and is the tertiary referral center for other advocate hospitals in the state of Illinois (13 other hospitals). Overall, my research efforts over the past 17 years have focused on NHL, Hodgkin lymphoma (HL), and other hematologic malignancies such as chronic lymphocytic leukemia (CLL). I have been involved, and continue to be, in health outcome research studies where I investigate disparities in clinical care and outcomes as well as the impact of external factors on these outcomes. Disparities in care of NHL and CLL patients exist between younger and older patients, men and women, and the elderly versus young. I also have special interest in the economic impact of newer therapies on patient care and how we can identify methods to reduce the overall cost of healthcare delivery in the US. I have published more than 200 manuscripts and abstracts. My attached curriculum vitae includes information on my academic and clinical background as well as a list of my scholarly activities and seminars in the field.

I have been asked to provide an opinion to a reasonable degree of medical probability on the association and causation of NHL and other hematologic malignancies in individuals exposed to Glyphosate and Glyphosate based Formulations (GBFs). As part of my clinical practice I regularly research the causes of NHL and how best therapies are designed. My papers in the enclosed CV highlight some of this work. Understanding disparities highlights plausible causes and allows possible investigation of modifiable risk factors where applicable. Optimal care of NHL in any patient requires reducing exposure to potential associated factors if known to this end, I regularly review NHL-related epidemiological and mechanistic studies. I routinely study and incorporate epidemiology

and toxicology into my clinical practice, academic studies and present work; both serve as important foundations to the practice of oncology.

The opinions in this report are my own and are held to a reasonable degree of medical and scientific certainty. These opinions were formed after comprehensive review of medical literature focusing on epidemiologic studies and analyses, as well as my background, education and experience.

### II. NON-HODGKIN LYMPHOMA

By way of background, lymphoid malignancies are a heterogeneous group of disorders that differ histologically and molecularly; they originate from the lymphoid system. In general, lymphomas are divided into HL and NHL. The former is sub-classified into classical HL or Nodular Lymphocyte Predominant HL. The prognosis of HL and any proposed treatment vary by stage, age of the patient, co-morbidities, and goals of therapy, but it involves systemic chemotherapy with known side effects and adverse events. The number of chemotherapy cycles and whether radiation is part of the treatment depend on the stage and risk factors of the disease. NHL is divided into either B-cell or T-cell NHL with the former being more common and having better prognosis in general. Although there are many subtypes of NHL, they are often studied together, especially as to causality, and are treated by the same specialist type (medical oncology).

T and B cell NHL could have similar clinical presentation although most T-cell NHL individuals have more advanced stage at presentation and are less likely to respond to treatment. On many occasions, the only way to differentiate between T and B-cell NHL is by performing an excisional biopsy and to perform detailed pathologic examination along

with immunohistochemical and molecular studies. Whether B or T cell subtype, NHL patients can carry either an indolent or aggressive course. Indolent disease is managed chronically with options ranging from observation to stem cell and bone marrow transplantation. Aggressive histologies are fatal without therapy; the cornerstone of which is systemic chemotherapy. The type of chemotherapy use, duration, and whether radiation is incorporated or not vary by disease stage, subtype, patient's choice, comorbidities, and goals of treatment. As stated, some lymphomas are cured while others are simply controlled. Even when cure is attained, the therapy used could lead to long-term adverse events, side effects, and complications that leave patients with symptoms that potentially impact quality of life adversely. Occasionally, chemotherapy used to treat lymphomas could lead to secondary malignancies such as myelodysplasia or acute leukemias.

Regardless of the type and subtype of NHL, the natural history of each histology varies widely. Indolent lymphomas can carry a long "latent" period. In other words, the disease could be present for months to years before it is discovered and diagnosed, often coincidently when a patient undergoes testing for something unrelated. By its nature, some indolent NHL may have no symptoms at diagnosis but can progress over the years and eventually cause symptoms that require therapy. Also, indolent NHL patients can transform onto an aggressive histology. It is estimated that the rate of transformation is 5-10% per year and it should be suspected when patients with indolent disease start having a more aggressive clinical course. Only a repeat excisional biopsy can determine with certainty that a patient is having transformed aggressive lymphoma. Any indolent lymphoma can transform into an aggressive histology at which point it should be treated

in an aggressive manner or the disease would be fatal. In contrast, aggressive NHL have a short "latent" period and causes symptoms within weeks to months unless treated. As an example, diffuse large B –cell lymphoma (DLBCL) patients succumb to the disease in less than 12 months (in some reports 6 months) unless aggressively treated. This observed variation is histology and host-dependent. Critical is to recognize the differences in these so-called latent periods as patients are diagnosed and treatment decisions are contemplated. Despite these differences, given the common origin of these lymphomas, they can still be studied from a causality and an epidemiologic state as one entity

### III. ETIOLOGIES of NHLs

Numerous plausible etiologies have been promulgated about what causes NHL, but one thing that appears clear is that oxidative stress and inflammation play a role. In B cell lymphomas, studies have suggested that increasing oxidative stress targeting cancer cells can lead to a therapeutic response. As stated, the risk of NHL has been associated with inflammation with reactive oxygen species (ROS) generating pro-inflammatory signals. Genetic variation in genes coding for Gluthathione peroxidase (enzyme that protects against harmful effects of the ROS) lead to increased risks of developing lymphomas (Lightfoot et al; Lymphoma Research; 2006). Analysis of genetic variation in oxidative stress genes in two lymphoma case-control studies suggests a possible role for oxidative stress in the risk of NHL. Gluthathione peroxidase (GPX1) is a gene that, when mutated, had an adverse impact on survival and disease-specific survival in large cell lymphoma. This suggests an important association of oxidative stress defense with treatment failure in this aggressive lymphoma (Andreadis; Blood; 2007). Moreover, as Redox mechanisms can be modified in hematologic malignancies, they may play a role

in cell survival and death. An older report showed that oxidative stress prohibits lymphoma cell lines from undergoing apoptosis when exposed to chemotherapies (Lee et al; JBC; 1999). These findings underscore that oxidants can manipulate cell death pathways diverting the cell away from apoptosis and that agents inducing oxidative stress can lead to cancer cells survival. The relationship between oxidative stress and NHL was further highlighted in a study of 518 NHL cases compared with 597 controls of women in Connecticut (Lan et al; Hum Gen; 2007). Single nucleotide polymorphisms (SNPs) in ten candidate genes that mediate oxidative stress were analyzed. These polymorphisms were associated with increased risk of various histologies of NHL suggestive that SNPs in genes related to oxidative stress pathway may be associated with higher risks of NHL. Similar findings were reported by others solidifying the relationship between oxidative stress and increased risk to the development of NHL (Wang; Carcinogenesis; 2006).

In cutaneous T cell lymphoma, the MUC1-C onco-protein plays a critical role in cell regulation and protects against cytotoxic injury mediated by ROSs (Jain et al; Blood, 2015). Treating patients with MUC1-C inhibitors allowed ROS-mediated apoptosis and necrosis. This underscores the role of oxidative stress and damage in the etiology of this lymphoma.

### IV. MECHANISTIC AND ANIMAL STUDIES OF GLYPHOSATE

Glyphosate is commercially sold as Roundup and is a commonly used herbicide in the US both on crops and on non-cropland areas. Glyphosate has been used since 1974 in Roundup, which is a combination of the active ingredient and other chemicals including surfactant that enhances the spreading of spray droplets when they contact foliage. Glyphosate is a broad-spectrum herbicide with primary mechanism being the

inhibition of the enzyme 5-enolpyruvoylshikimate 3-phosphate synthase, which is essential for the formulation of aromatic amino acids in plants. Glyphosate has the highest global production volume of herbicides and its largest use as stated is in agriculture. It has been detected in the air during spraying, in water, and in food. The general population is exposed when residing near sprayed areas, home use, and diet.

The interaction of glyphosate with skin through percutaneous absorption has been studied. In vitro percutaneous absorption through human skin into human plasma as receptor fluid was 2% over a concentration range of 0.5-154 micrograms/cm2 and a topical volume range of 0.014-0.14 ml/cm2. Percutaneous absorption in vivo in rhesus monkey was 0.8 +/- 0.6% for the low dose (25 micrograms/cm2) and 2.2 +/- 0.8% for the high dose (270 micrograms/cm2). About 50% of the initially applied dose could be recovered after 24 hour (Wester RC, 1991). In a more modern study that explored how damaged skin due to occupational hazards or other reasons can be affected by glyphosate (Nielsen et al, Arch Dermatol Res, 2007), it was shown that a mild damage to the skin significantly increases the permeability, which could lead to pathologic changes related to potential chemical exposure.

Animal data have suggested a carcinogenic potential for glyphosate. Brammer et al performed a 2-year study in which exposed male rats showed a statistically significant trend in liver adenomas. No actual malignancies were reported in this study that was conducted in the UK between 1998-2000; but renal papillary necrosis, hematuria, and periodontal inflammation were all observed in males and females that were fed higher doses of glyphosate acid. While some reports (Chruscielska et al, 2000) suggested lack of pathogenic influence of glyphosate on neoplastic pathogenesis, others have suggested

changes consistent with carcinogenic potential. Sivikova (2009) showed chromosomal aberrations in bovine lymphocytes, a finding that was more often seen when higher concentrations of glyphosate were used. Peluso et al (1998) found that higher doses of mixture compounds that include glyphosate could cause DNA damage and potentially subsequent cellular toxicity resulting from such damage. These findings are critical, as they have been observed in humans.

Envi Health, 2011)(observing genetic damage in humans exposed to pesticides). The DNA damage as a possible etiology to observed pathogenic effects is supported by studies on genotoxicity of glyphosate. In a study from 2009 (Bolognesi), Women of reproductive age (137 persons; 15-49-year-old) and their spouses (137 persons) were interviewed to obtain data on current health status, history, lifestyle, including past and current occupational exposure to pesticides, and factors including those known to be associated with increased frequency of micronuclei, assign of genotoxicity. In this study, blood samples were taken before spraying glyphosate, 5 days after, and again 4 months after spraying. Micronuclei were discovered in lymphocytes of individuals exposed to glyphosate. Interestingly, these observations persisted in some persons when samples were compared at 5-days and 4 months after spraying.

An updated review of the literature (using PubMed and Med-Line search engines) evaluated 55 manuscripts that investigated the relationship between genotoxicity and herbicide exposure, including glyphosate (Bolognesi; 2016). Majority of analyzed studies reported positive findings with a validated genotoxicity assay and exposure. Positive findings were noted for glyphosate. Notably, when proper personal protection is used,

there was less pesticide-induced genotoxicity. In contrast, subjects working in greenhouses or during intensive spraying season and having acute exposure, showed consistent increases in micronuclei frequency.

Mechanisms by which glyphosate can induce injury such as this are unclear, but oxidative stress has been suggested as a plausible pathogenic cause. The imbalance between calcium levels and oxidative stress was shown as a possible cause for glyphosate-induced proliferation in human keratocytes (George et al; Dermatology; 2013). This study highlighted glyphosate as possibly promoting proliferation in these cells disrupting the balance between calcium and oxidative stress, which in turn could lead to downregulation of mitochondrial apoptotic signaling pathways, a known etiology for malignant potential and transformation. Oxidant stress as a possible etiology to cellular damage has been reproduced by others (i. e. Lioi ei al, 1998; Lueken et al, 2004; and Kwiatkowska et al, 2014).

Mesnage et al reviewed toxicity studies between Roundup-treated rats and controls but no conclusive answer could be derived. The authors noted that a definitive answer about glyphosate carcinogenic effects in laboratory animals would come from invivo carcinogenicity testing at environmentally relevant concentrations. The US-EPA analyzed immunotoxicity studies in mice exposed to glyphosate and issued a report on February 2013, the results of which were essentially negative. However, these observations were in contrast with other studies where lethal toxicity was demonstrated in other organisms. The lack of consistent reports in animal studies and the ubiquitous use of glyphosate amongst farmers generated the need to conduct human studies and analyses to determine whether this herbicide increases the neoplastic predisposition.

# V. ASSESSMENT OF CARCINOGENIC RISK IN HUMANS

### a. Epidemiological studies

Several epidemiological studies showed statistically significant increased risks among people exposed to glyphosate. In a Canadian multicenter population-based study (McDuffie et al, 2001), 517 cases and 1506 controls were assessed using a postal questionnaire that was followed by a telephone interview for individuals reporting pesticide exposure more than 10 hours per year. Notably, pathologists in participating provinces were requested to send blocks or slides of tumor tissue to the reference pathologist. As expected, not all samples were centrally reviewed. Among major chemical classes of herbicides, the risk of NHL was statistically significantly increased among glyphosate exposed individuals with an OR of 1.26 (95% CI: 0.87-1.80) which changed slightly after adjustment for covariates to an OR of 1.2 (95%CI: 0.83-1.74). For individuals exposed to glyphosate more than two days per year the OR was statistically significant at 2.12 (1.20–3.73). These findings supported a plausible association between NHL and pesticides. The authors approached this question by initially evaluating herbicides in general and their association with NHL. They subsequently assessed various chemical classes and individual chemicals.

On behalf of the Swedish registry, Hardell et al (2002) analyzed their data on NHL (404 cases and 741 controls) and hairy cell leukemia (111 cases and 400 controls) that were previously published (see above) and analyzed the data collectively (515 cases and 1141 controls). Of the herbicides, glyphosate had an OR of 3.04 (95% CI: 1.08-8.52). In a multivariate analysis adjusted for age, county, study site, and vital status, OR was 1.85 (95% CI: 0.55-6.20).

De Roos (2003) conducted a pooled analysis of men that were enrolled in several studies (Nebraska, Iowa, Minnesota, and Kansas), and analyzed findings collectively. In Nebraska, the information were obtained through questioning the use of specific pesticides with details on the total number of years of use and average number of days per year. In Iowa and Minnesota, use was assessed by a direct question about a selected list of specific pesticides. In Kansas, use of pesticides was assessed by a direct question about a selected list of specific pesticides along with duration of use. In total, 650 cases (response rate 75%) and 1933 controls (response rate 75%) were included for NHL diagnosed between 1979-1986. OR for glyphosate increasing the risk of NHL was 2.1 (95% CI: 1.1-4.0). In another study, Lee et al investigated whether asthma modifies the risk of NHL associated with pesticides exposure. Cases (872) diagnosed with NHL between 1980-1986 and controls (2381) randomly selected from the same geographic areas were included. The OR was 1.4 (95% CI: 0.98-2.1) in non-asthmatics and 1.2 (95% CI: 0.4-3.3) in asthmatics who were exposed to glyphosate. Asthma history was based on individual responses and was not verified.

De Roos (2005) reported on results from The Agricultural Health Study (AHS). The AHS is a prospective cohort study in Iowa and North Carolina, which includes 57,311 private and commercial applicators who were licensed to apply restricted-use pesticides at the time of enrollment between 1993-1997. Comprehensive data on 22 pesticides were collected using a self-administered enrollment questionnaire. Of note, the study began by collecting baseline information from participants when they enrolled (1993-1997). Follow up phone interviews were done in the second phase (1999-2003) and third phase (2005-2010). However, phase 2 was completed by only 64% of the private applicators,

59% of commercial applicators, and 74% of spouses. Notably, phase 3 of the AHS included updated information on farming practices, lifestyle, and overall health; however, this phase was completed by only 46% of enrolled private applicators and 62% of enrolled spouses. Participants completed the questionnaires either by mail, telephone, or through the internet; for the first time, next of kin could provide general health update information for those who could not complete the questionnaires themselves (https://aghealth.nih.gov/about/).

Based on the AHS (De Roos et al, 2005), the relative risk of developing NHL in glyphosate exposed individuals was 1.2 (95% CI: 0.7-1.9), but was 1.1 (95% CI: 0.7-1.9) after adjustment for covariates. However, the risk for developing multiple myeloma, a form of mature B-cell neoplasm, was 2.6 (95% CI: 0.7-9.4) after adjustment (factors includes age, demographics, lifestyle factors, and other pesticides). These data and exposure assessment was based on the questionnaires filled out at time of enrollment (1993-1997) and included NHL cases through 2001.

Using data from an Australian registry that investigated NHL cases diagnosed between 1/1/2000-8/31/2001 (Fritschi et al. 2005), 694 cases and similar number of controls were assessed. All cases were for individuals between the ages of 20-74 and all cases were reviewed by a central pathologist who confirmed the report of consenting patients. OR for all herbicides collectively was 3.29 (95% CI: 0.88-12.3) but no data on glyphosate individually were reported. In this study, exposure was defined as more than five 8-hour days in a year for a combined total of 5 years. Most people were exposed for more than 6 months of use for 8-hours per day every day. Of note, some prior studies

that were highlighted above used "any" exposure more than 1 year as a proper definition.

The OR for substantial exposure to all herbicides was 4.83 (95% CI: 1.06-22.0).

Data from the Swedish registry confirmed that duration of exposure might lead to increased risks. Eriksson et al (2008) evaluated 910 cases (response rate 91%) of NHL in patients 18-74 years of age and 1016 controls (92% response rate) to assess risk of developing the disease in glyphosate-exposed individuals. This study divided NHL cases into various histologic subgroups. Individuals exposed <=10 days to glyphosate had an OR of 1.69 (95% CI: 0.70-4.07) while others with longer exposure at >10 days had an OR of 2.36 (95% CI: 1.04-5.37). When assessing histologies, OR to developing diffuse large B-cell lymphoma was 1.22 (95% CI: 0.44-3.35) while it was 2.29 (95% CI: 0.51-10.4) for T-cell lymphoma and 5.63 (95% CI: 1.44-22.0) for unspecified NHL. Of note, T-cell lymphoma generally has worse prognosis than B-cell disease and treatment options are usually limited. Notably, large cell lymphoma and T-cell histologies are aggressive forms of NHL where treatment is indicated.

A French study that spanned 2000-2004 (Orsi et al, 2009), suggested increased risk to developing HL and myeloma in patients exposed to pesticides. This study was conducted among 6 centers looking at incident cases with lymphoid neoplasm diagnosis in patients aged 18-75 years. Control cases were patients with rhematology and/or orthopedic problems within the same participating institutions. Exposures were evaluated through specific interviews and case-by-case expert reviews. In this study, little evidence was shown in this study as to the relationship between NHL and exposure. This might be a sample effect as only 244 cases of NHL were evaluated in this study.

In another European study and with a larger sample size, Cocco et al (2013) compared 2348 NHL cases with 2462 controls between 1998-2003, who were present in 6 European countries (Czech Republic, France, Germany, Italy, Ireland, and Spain). The authors found that OR for NHL in glyphosate-exposed individuals was 3.1 (95% CI: 0.6-17.1). This finding might suggest that the aforementioned French study was partially negative for NHL association due to sample size.

While most of epidemiologic studies were conducted in men, a population-based, incidence case-control study was performed in 376 women residing in New York who developed NHL (Kato et al. 2004). These cases were compared with 463 controls selected from the Medicare beneficiary files and state driver's license records. The risk of NHL increased in women who worked at least 10 years at a farm where pesticides were used (OR: 2.12; 95% Cl 1.21-3.71). Not surprisingly, duration of exposure correlated with higher risks.

## b. META-ANALYSES

Schinasi and Leon performed a systematic review and a Meta-Analysis to better understand the association between agricultural pesticide chemical groups and NHL development. To do so, the search included articles published in English since 1980 until 2014. When repeated papers were reviewed, the one with the most complete and updated analysis was used. Starting with 858 articles, 44 only were included in the qualitative analysis and of these, 20 papers provided estimates of association with herbicide chemical groups or active ingredients, 4 provided association with fungicides, and 17 with insecticides. Of the included papers, several had data on glyphosate (Cantor et al, 1992; Cocco et al, 2013; De Roos et al, 2003; De Roos et al, 2005; Eriksson et al,

2008; Hardell et al, 2002; and Orsi et al, 2009). The studies that were analyzed in this Meta-Analysis were performed in the US, Canada, Europe, Australia, and New Zealand. Most papers were restricted to men. This Meta-Analysis found an association between glyphosate and B-cell lymphoma with an OR 2.0 (95% CI: 1.1-3.6) and this was the same OR for diffuse large B-cell lymphoma. This Meta-Analysis represented a summary of the data published in the preceding 25 years, and solidifies a plausible association between glyphosate and NHL evolution and development.

Another Meta-Analysis was reported by Chang and Delzell (J Environmental Science and Health; 2016). Glyphosate was found to increase the risk of NHL at a relative risk of 1.3 (95% CI: 1.0-1.6). Similarly, RR for myeloma was 1.4 (95% CI: 1.0-1.9). This Meta-Analysis included original studies discussing the topic, which were reported on PubMed and Google Scholar along with additional references that were found in the bibliography of review articles. Collectively, 19 articles were included as well as one abstract and one letter to the editor. When analyzing NHL by subtype, RR for B-cell lymphoma was 2.0 (95% CI: 1.1-3.6). For CLL, RR was 1.3 (95% CI:0.2-10.0), follicular lymphoma 1.7 (95% CI: 0.7-3.9). Notably, no increased risk for HL was found in this study. To the contrary, Greim et al suggested lask of association (Crit Rev Toxicology; 2015), however one of the co-authors of this work was employed by Monsanto and provided ghostwriting making me question the credibility of this work.

## c. SYSTEMATIC REVIEWS

i. International Agency for Research on Cancer (IARC)

Aside from peer-reviewed research investigations, governmental and independent agencies conducted their own research to further delineate the relationship between glyphosate exposure and risks of developing NHL. To that end, the International Agency for Research on Cancer (IARC), a division of the WHO provided a summary of its opinion on the carcinogenicity of five organophosphate pesticides. To reach a conclusion, IARC evaluated the epidemiologic studies, most of which were summarized above, as well as reports from the US-EPA and concluded that glyphosate is probably carcinogenic to humans increasing the risk, among others, of NHL. The analysis was also supported by animal studies and in-vitro findings where DNA damage and chromosomal changes were also seen; these are generally predisposing to cancer. The level of evidence supported probable causality (level 2A), which is a strong evidence given the difficulty in conducting any type of prospective analysis or randomized studies in these situations. IARC report was conceived in 2015 after an in-person meeting took place between 17 experts in the field form 11 countries. This meeting took place after a 3-months period of reviewing the literature and analyzing all available data and evidence. Important to note that the IARC observed glyphosate being detected in the blood and urine of agricultural workers, indicating absorption. Soil microbes degrade glyphosate to aminomethylphosphoric acid (AMPA). The IARC investigators noted how glyphosate induces DNA and chromosomal damage in mammals and human and animal cells in vitro. The preponderance of evidence concluded an association between glyphosate and NHL and led the scientists declare this 2A (probable) to level as (http://www.iarc.fr/en/mediacentre/iarcnews/pdf/MonographVolume112.pdf). This would be the highest level of evidence possible short of a "definitive" association. Notably, this

IARC report was in contrast with a different study prepared by the German Federal Institute for Risk Assessment (BfR) which concluded that glyphosate is unlikely to be carcinogenic to humans. As the BfR report was the basis of how the European Food Safety Authority (EFSA) evaluates food safety, it became critical to comprehensively assess the BfR data given these conflicting reports.

# ii. EPA SAP Panel Review:

In September 2016, the Office of Pesticide Programs (OPP) of the EPA released a position paper on the carcinogenic potential of glyphosate. The OPP proposed a finding that glyphosate was not likely to be carcinogenic to humans. The OPP analysis was subjected to review by a Scientific Advisory Panel (SAP) commissioned by the EPA. The SAP included members that represented all stakeholders and investigated methodologies and findings. While the panel found that the EPA literature review methods as transparent and appropriate in general, the members provided recommendations for updated searches as recent data were not included or analyzed. In fact, the panel recommended that the EPA contacts the AHS investigators to determine whether updated data on incidence of NHL and other cancers are available. The EPA clearly criticized the AHS publication (De Roos et al; 2005) for its limited follow up period and the drop off in questionnaires' answering. The panel commented on the unusually low number of epidemiological studies identified through searches of PubMed, Science Direct®, and Web of Science™, which may indicate the need to utilize more comprehensive and sensitive techniques in conducting searches of the databases than what was employed. Overall, the panel members concluded that the EPA evaluation does not appear to follow the EPA (2005) cancer guidelines, notably for use of historical control data and statistical testing requirements. Regarding historical controls, the Panel noted that the default position should be to not rely on historical control data except when concurrent controls yield clearly unreliable results. The Panel recommended that EPA articulate why historical control data were incorporated into some of its analyses and not in others. Regarding statistical testing requirements, the Panel noted that requiring a significant pairwise comparison corrected for the number of pair-wise tests in addition to a significant trend is neither consistent with the 2005 Guidelines for Carcinogen Risk Assessment nor a conservative approach for public health protection.

The panel further noted that the EPA inappropriately placed greater weight on the AHS study than the case-control studies noting "the usual higher ranking of cohort studies vis-à-vis case-control studies is not applicable in this particular review" and that the AHS study "has certain limitations that do not justify its separation into a higher quality ranking over the studies classified as having 'moderate quality."

In the end the panel was split with some members concluding that "the weight-of-evidence conclusion based on EPA's 2005 Guidelines naturally leads to suggestive evidence of potential carcinogenic effects," while other member agreed with the OPP.

VI. Application of Bradford Hill Criteria: The Bradford-Hill criteria (J Roy Soc Med 1965:58:295-300)

Strength of the association: Critical to note that small association does not
preclude a causal effect. In reviewing the evidence and the epidemiologic studies
cited above, glyphosate appears to increase the risk of NHL and other lymphoid
malignancies by an OR from 1.2->4.

- 2. Consistency and reproducibility of findings: Studies stated above showed consistent results. Some of these studies were done in the US while others were conducted in Canada, Australia, and Europe. The consistent findings that glyphosate increases the OR of developing NHL across studies and in different continents, supports the relationship and argues for plausible association.
- 3. **Specificity:** In reviewing the studies, a common theme emerges. Farmers and individuals with an exposure to glyphosate via agricultural work appear to have higher risk of developing NHL.
- 4. **Temporality:** Epidemiologic evidence showed that individuals with exposure have increased risk of developing NHL while matched controls do not. Exposed individuals did not have other risk factors prior to exposure that would suggest they had an increased risk to developing lymphomas.
- Biological Gradient: Some studies have suggested higher risk with more exposure.
- 6. Plausibility: In reviewing some of the cellular toxicity that glyphosate exerts, genotoxicity, DNA damage, and chromosomal aberrations were noted, all of which are mechanisms by which cancers in general and lymphomas in particular could develop and emerge. In addition, oxidative stress is a known risk factor to developing NHL, and glyphosate has been shown to increase cellular oxidative stress.
- 7. **Coherence:** Cellular studies, animal studies, and human studies were all consistent in showing an association between glyphosate and NHL. This consistent finding supports the accuracy of epidemiologic research cited above.

- 8. Experiment: When investigating causality of external factors to developing malignancies, conducting prospective randomized studies is impossible and unethical. To study this type of research, scientists must rely on retrospective analysis as stated above. Understanding this causality however allows protecting future individuals from developing deadly diseases.
- 9 Analogy: Some of the cited studies showed that other herbicides could also increase the risks of developing NHL supporting that could be a class effect as

## CONCLUSIONS

Glyphosate has been used extensively worldwide and compelling data exists on association between glyphosate and development of NHL. This is based on epidemiologic evidence, animal studies, cellular data, genotoxicity, and other demonstrated evidence discussed above; all of this is supported by the application of the Bradford-Hill criteria, which suggest a strong epidemiologic association and causality.

The level of evidence on glyphosate association with NHL is strong as detailed above; in conclusion, my opinions are:

- The use of Roundup can cause or be a substantial contributing factor to the development of any subtype of non-Hodgkin lymphoma
- Dose response effect is seen in some case-control studies, which reach positive,
   statistically significant results on the association of Roundup and NHL
- Such a dose-response effect is strong evidence of causality

 The weight of the scientific evidence supports causality between Roundup/glyphosate exposure and NHL.

Date: April 28, 2017

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Chadi Nabhan, M.D.

- · CV is attached hereto
- Dr. Nabhan has not testified in any litigation in the past four years
- Dr. Nabhan's rate for expert consulting/testimony is \$550 per hour

# Attachment A

01/01/2016

# Chadi Nabhan, M. D., F. A. C. P. (MBA- expected 7/2016)





# **ACADEMIC and STAFF APPOINTMENTS**

8/04 - 6/13	Assistant Professor. Department of Medicine, Division of Hematology and Oncology, Northwestern University Feinberg School of Medicine and Robert H. Lurie Comprehensive Cancer Center
3/08 - 6/13	Director and Chief, Division of Hematology and Medical Oncology, Department of Medicine, Advocate Lutheran General Hospital, Park Ridge, IL
11/09 - 12/12	Director, Hematology and Medical Oncology Fellowship Program, Advocate Lutheran General Hospital, Park Ridge, IL
8/12 - 6/13	Medical Director, Cancer Institute, Advocate Lutheran General Hospital, Park Ridge, IL
1/13 - 6/13	Associate Program Director, Hematology/Oncology Fellowship Program, Advocate Lutheran General Hospital, Park Ridge, IL
7/13 -	Medical Director, Clinical Cancer Center and Cancer Clinics The University of Chicago Comprehensive Cancer Center
7/13 -	Associate Professor of Medicine Department of Medicine, Section of Hematology and Oncology The University of Chicago Medicine

# **ACADEMIC and GRADUATE TRAINING**

9/85 - 9/91	M.D., Damascus University Medical School, Damascus, Syria
9/91 - 9/92	Intern, Al-Mouassatte and University Hospitals, Damascus University, Syria
11/92 - 4/94	Kaplan Educational Center, Preparation for USMLE steps 1, 2, and 3 courses, Boston, MA
4/94 - 6/95	Research Fellow/Associate, Massachusetts General Hospital, Harvard Medical School, Endocrine Unit, Boston, MA
7/95 - 7/96	Intern, Loyola University Medical Center of Chicago, Maywood, IL
7/96 - 7/98	Resident, Loyola University Medical Center of Chicago, Maywood, IL
7/99 - 7/02	Fellow, Division of Hematology and Medical Oncology, Northwestern University Feinberg School of Medicine and Robert H. Lurie Comprehensive Cancer Center, Chicago, IL
7/01 - 7/02	Chief Fellow, Hematology and Oncology, Northwestern University Feinberg School of Medicine, Chicago, IL

8/14 – 7/16 Masters of Business Administration (MBA) with focus on Health Care Management. Loyola University Quinlan School of Business (Graduating in July 2016)

### LICENSING AND BOARD CERTIFICATION

11/98 - 11/08	Diplomat, Internal Medicine, American Board of Internal Medicine
11/02 - 11/12	Diplomat, Medical Oncology, American Board of Internal Medicine
11/02 - 11/12	Diplomat, Hematology, American Board of Internal Medicine
11/08 - 11/18	Re-certified, Internal Medicine, American Board of Internal Medicine
11/10 - 11/22	Re-certified, Medical Oncology, American Board of Internal Medicine
11/10 - 11/22	Re-certified, Hematology, American Board of Internal Medicine
1997 -	State of IL license: 036-095980 (expires: 07/31/2017)
1997 -	State of WI license: 38627-20 (expires: 10/31/2017)
1999 -	State of IN License: 01051164A (expires 10/31/2017)
2008 -	State of FL license: ME-101853 (expires: 01/31/2016)
2015-	State of CA license: 137816 (expires 8/31/2017)
2002 -	DEA# BN-7399795 (expires: 10/31/2016)

# PROFESSIONAL SOCIETIES

1996 -	American College of Physicians (ACP)
1999 -	American Society of Hematology (ASH)
1999 -	American Society of Clinical Oncology (ASCO)
2000 -	American Association of Cancer Research (AACR)
2007 -	American Society of Blood and Marrow Transplantation (ASBMT)
2014-	International Society of Geriatric oncology (SIOG)
2015-	Member of the European Hematology Association (EHA) Lymphoma Group
2016-	American College of Health Executives

# HONORS, PRIZES, AND AWARDS

1990	Best student in community services for underdeveloped regions in Syria; Part of a community-based rotation during 5 <sup>th</sup> year of medical school
1991	Top10% of medical school graduating class, Damascus University Medical School, Damascus, Syria
2000 - 2002	National Cancer Institute funded Fellow on Clinical Oncology Research Training Program (Grant # 5T32 CA 79447); Northwestern University Feinberg School of Medicine, Chicago, IL
2001 - 2002	Chief Fellow, Hematology and Medical Oncology, Northwestern University Feinberg School of Medicine
2002	Elected as a member in the American Registry of Outstanding Professionals
2004 - 2012	Various "Compassionate-Spirit" Awards, Advocate Lutheran General Hospital, Park Ridge, IL
2005	Teaching Achievement of the Year Award, Department of Medicine, Advocate Lutheran General Hospital, Park Ridge, IL
2007	Inducted as a Fellow to the American College of Physicians
2008	Valuable Leader for "Excellence" Award, Advocate Lutheran general Hospital, Park Ridge, IL
2008 - 2010	Patients' Choice Awards at www.vitals.com

2010	Valuable Leader for "Compassion" Award, Advocate Lutheran General Hospital, Park Ridge, IL
8/2011	Selected to be featured on "Recognizing our Physicians" wall for "Exceptional" patient care, Advocate Lutheran General Hospital, Park Ridge, IL
12/2012	Selected as an ASH (American Society of Hematology) abstract reviewer for the Annual ASH meeting, Atlanta, GA; Category: Lymphoma, Chemotherapy, excluding pre-clinical models.
3/2013	Spirit Award for "Compassion", Advocate Lutheran General Hospital, Park Ridge, IL
5/2014	Selected to serve as a member on the ASCO Health Disparities Committee
7/2014	Selected to serve as a member on the ASH Digital Education Working Group; a subcommittee of the ASH Educational Affairs Committee
8/2015	Selected among the Top Cancer Doctors in the US by Newsweek Health (http://www.newsweek.com/top-cancer-doctors-2015?page=26&group=state)
1/2016	Selected in the TOP-Doctors Chicago Magazine issue for top doctors; category: Medical Oncology ( <a href="http://www.chicagomag.com/Chicago-Magazine/January-2016/Top-Doctors/Cancer/">http://www.chicagomag.com/Chicago-Magazine/January-2016/Top-Doctors/Cancer/</a> )
CLINICAL	
3/03 - 6/13	Hematology and Medical Oncology in-patient service (4-weeks/year), Advocate Lutheran General Hospital, Park Ridge, IL
7/06 - 6/13	Hematology and Oncology Fellows' clinic (1-2 half/days a week), Advocate Lutheran General Hospital, Park Ridge, IL
7/13 -	Medical Oncology in-patient service (4-weeks/year) The University of Chicago Hospitals, Chicago, IL
7/13 -	Hematology and Oncology Fellows' clinic (Lymphoma and Genitourinary clinics) 3 half-day clinics per week The University of Chicago Comprehensive Cancer Center, Chicago, IL

### SCHOLARSHIP/PUBLICATIONS

Peer-reviewed publications in primary literature, exclusive of abstracts (trainees underlined):

- Nabhan C, Xiong Y, Xie L, Abou-Samra AB. July 1995. The alternatively spliced type II Corticotropin- Releasing Factor stably expressed in LLCPK-1 Cells is NOT well coupled to G protein (s). Biochem and Bioph Res Comm, Vol 212, No 3.
- 2. **Nabhan C,** Rosen ST. January 2002. Conceptual aspects of combining Rituximab and CAMPATH-1H in refractory chronic lymphocytic leukemia. *Seminars in Oncology, Vol 29: Issue 1, Suppl 2, 75-80.*
- Nabhan C, Tallman MS, Peterson L, Kent S, Dewald G, Multani P, Gordon LI. November 2002. Secondary acute myeloid leukemia with MLL gene rearrangement following radioimmunotherapy (RAIT) for non-Hodgkin's lymphoma. Leukemia and Lymphoma, Vol 43, Issue 11, 2145-2149.
- Nabhan C, Gajria D, Krett NL, Gandhi V, Rosen ST. November 2002. Caspase activation is required for gemcitabine-induced apoptosis in multiple myeloma cell lines. *Molecular Cancer Therapeutics*, Vol 1, No 13, 1221-1227.

- Krett NL, Ayres M, Nabhan C, Ma C, Nowak B, Nawrocki S, Rosen ST, Gandhi V. May 2004. In vitro assessment of nucleoside analogs in multiple myeloma. Cancer Chemotherapy and Pharmacology. Vol 54, 113-121.
- Nabhan C, Rundhaugen L, Riley MB, Boehlke L, Jatoli M, Rademaker A, Tallman MS. August 2004. Gemtuzumab Ozogamicin (Mylotarg) is infrequently associated with Sinusoidal Obstructive Syndrome. *Annals of Oncology, Vol* 15, 1231-1236.
- Parmar S, Rundhaugen LM, Boehlke L, Riley MB, Nabhan C, Raji A, Tallman MS. September 2004. Phase II Trial of Arsenic Trioxide (ATO) in Relapsed and Refractory Acute Myeloid Leukemia, Secondary Leukemia, and/or Newly Diagnosed Patients ≥ 65 Years Old. Leukemia Research, Vol 28, Issue 9, P 909-919.
- Krett NL, Davis KM, Ayers M, Ma C, Nabhan C, Gandhi V, Rosen ST. November 2004. 8-Amino-Adenosine is a Potential Therapeutic Agent for Multiple Myeloma, *Molecular Cancer Therapeutics*, 3 (11), 1411-1420.
- Nabhan C, Patton D, Gordon LI, Riley MB, Kuzel T, Tallman MS, Rosen ST. November 2004. A pilot trial of Rituximab and Alemtuzumab combination therapy in patients with relapsed and/or refractory chronic lymphocytic leukemia (CLL). Leukemia and Lymphoma, Vol 45, 11. P 2269-2273.
- 10. Nabhan C, Rundhaugen LM, Riley MB, Rademaker A, boehlke L, Jatoi M, Tallman MS. January 2005. Phase II pilot trial of Gemtuzumab Ozogamicin (GO) as first line therapy in acute myeloid leukemia patients' age 65 or older. Leukemia Research, 29 (1), 53-57.
- 11. Nabhan C. A simple Wish... Unfulfilled. March 2006. J Clin Oncol. 24 (7), 1217-1218.
- 12. Nabhan C, Ragam A; Samuels B; Milton DT; Prasad L; Hooberman A; Hartsell W; Anthony A; Weiseman R; Bitran JD. March 2007. Mitomycin-C, 5-Fluorocracil, Leucovorin, and Hyperfractionated Irradiation Therapy for rectal carcinoma: A phase II study with long-term follow-up. Clinical Colorectal Cancer, Vol 6, 436-441.
- 13. Morowa E, Ragam A, Sirota R, and Nabhan C. April 2007. Hodgkin Lymphoma involving the central nervous system, *J Clin Oncology*, Vol 25 (11), 1437-1438.
- 14. Ragam A, Apichai S, Radhakrishnan A, Gonzalez M, Laurie T, and Nabhan C. December 2008. Extragonadal choriocarcinoma in Ulcerative Colitis, J Clin Oncology, Vol 26 (35) 5813-5814.
- 15. Nabhan C. Clofarabine in relapsed lymphoma. What is the optimal dose? July 2009. Leukemia and Lymphoma Vol 50 (7), 1230-1231.
- 16. Radhakrishnan A. Bitran JD, Milton DT, Tolzien K, Hallmeyer S, and Nabhan C. August 2009. Docetaxel and Oxaliplatin as a first line therapy for advanced Non small cell lung cancer: a Phase II Trial. J Chemotherapy, Vol 21 (4), 439-444.
- 17. Nabhan C. How could you do this Doctor? September 2009. Am J Hosp Palliat Care, Vol 26 (4), 239-240.
- 18. Nabhan C, Lestingi TM, Galvez A, Tolzien K, Kelby SK, Tsarwhas D, Newman S, Bitran JD. September 2009. Erlotinib has modest activity in chemotherapy-naive castration-resistant prostate cancer: Final results of a phase II trial. *Urology, Vol 74 (3), 665-671.*
- Nabhan C and <u>Radhakrishnan A</u>. October 2009. Aplastic anemia surfacing after treatment of acute promyelocytic leukemia: The Dameshek Riddle. Clin Advan Hematology and Oncology, Vol 7 (9).
- 20. Nabhan C. I need a hug, please! November 2010. Am J Hosp Palliat Care, Vol 27(7):500-1.

- 21. Nabhan C, Davis N, Bitran JD, Galvez A, Fried W, Tolzien K, Foss S, Dewey WM, Venugopal P. April 2011 (Epub ahead of print 11/2010). Efficacy and safety of clofarabine in relapsed and/or refractory non-Hodgkin lymphoma, including rituximab-refractory patients. Cancer, Vol 117(7): 1490-7.
- 22. Nabhan C, Meyer A. Tolzien K, Bitran JD, Lestingi TM. July 2011. A Phase II Pilot Trial Investigating the Efficacy And Activity of Single Agent GM-CSF as Maintenance Approach in Castration-Resistant Prostate Cancer Patients Responding to Chemotherapy. Avicenna Journal of Medicine, 1: 12-17
- 23. Jabbari S, Pins M, <u>Kruczek KR</u>, and **Nabhan C**. October 2011. Erlotinib eradicates brain metastases from EGFR mutant non-small cell lung cancer. *Avicenna Journal of Medicine*, *Vol. 1, Issue 2, P52-54*.
- 24. Nabhan C, Smith, SM, Helenowski,I, Ramsdale E, Karmali R, <u>Parsons B</u>, Feliciano J, <u>Hanson B</u>, Smith S, McKoy J, Larsen A, Hantel A, Gregory S, Evens AM. January 2012 (Epub ahead of print 11/2011). Analysis of Very Elderly (≥ 80 Years) Non-Hodgkin Lymphoma: Impact of Functional Status and Co-Morbidities on Outcome. *Br J Hematology*, *Vol* 156(2):196-204.
- 25. Evens AM, Helenowski I, Ramsdale E, Nabhan C, Karmali R, Hanson B, Parsons B, Smith SE, Larsen A, McKoy J, Jovanovic B, Gregory SA, Gordon LI, Smith SM. January 2012 (Epub ahead of print 11/2011) A Retrospective Multicenter Analysis of Elderly Hodgkin Lymphoma: Outcomes and Prognostic Factors in the Modern Era. Blood. Vol 19; 119(3): 692-5.
- 26. Nabhan C, Villines D, <u>Dalal N</u>, Tolzien K, Kozloff M, Starr A. Bortezomib (Velcade), Rituximab, Cyclophosphamide, and Dexamethasone (VRCD) combination regimen is active as front-line therapy of low-grade non-Hodgkin lymphoma. February 2012 (Epub ahead of print 7/2011). Clinical Lymphoma, Myeloma, and Leukemia. Vol 12(1): 26-31.
- 27. Armand P, Kim HT, Zhang M, Perez WS, Dal Cin P, Klumpp TR, Lazarus HM, Artz AS, Gupta V, MD, Isola LM, Halter J, Cutler CS, Rowe JM, Antin JH, Camitta BM, Cairo MS, Sierra J, Stiff PJ, Nabhan C, Jakubowski AA, Devine SM, Maziarz RT, Marks DI, Soiffer RJ, Weisdorf DJ. February 2012 (Epub 7/2011). Classifying Cytogenetics in patients with AML in complete remission undergoing allogeneic transplantation: A CIBMTR study. Biol Blood Marrow Transplant. Vol 18(2): 280-8.
- 28. Nabhan C, Byrtek M, Taylor MD, Friedberg JW, Cerhan JR, Hainsworth JD, Miller TP, Hirata J, Link BK, Flowers C. October 2012 (Epub ahead of print 3/2012). Racial Differences in Presentation and Management of Follicular Non-Hodgkin Lymphoma in the United States: Report from the National LymphoCare Study. Cancer, 118(19): 4842-50.
- 29. Nabhan C, Tolentino A, Meyer A, Tallman MS. May 2012 (Epub ahead of print 12/2011). Cutaneous involvement with acute lymphoblastic leukemia. *Leukemia and Lymphoma. Vol.* 53(5): 987-9.
- 30. Nabhan C, Villines D, Valdez TV, Tolzien K, Lestingi TM, Bitran JD, Christner SM, Egorin M, Beumer JH. August 2012 (Epub ahead of print 7/2012). Phase I Study investigating the Safety and Feasibility of combining Imatinib Mesylate (Gleevec) with Sorafenib in Patients with Refractory Castration-Resistant Prostate Cancer. British J Cancer, 107(4): 592-7.
- 31. Nabhan C. July 2012 (Epub ahead of print 4/2012) Her Wedding. J Clin Oncology. Vol.: 30(21): 2701-2.
- 32. Keating A, DaSilva G, Pérez WS, Gupta V, Cutler CS, Ballen KK, Cairo MS, Camitta BM, Champlin RE, Gajewski JL, Lazarus HM, MD, Lill M, Marks DI, **Nabhan C**, Schiller GJ, Socie G, Szer J, Tallman MS, Weisdorf DJ. February 2013 (Epub ahead of print 9/2012). Autologous Blood Cell Transplantation Versus HLA-Identical Sibling Transplantation For Acute Myeloid

- Leukemia In First Complete Remission: A Registry Study From The Center For International Blood and Marrow Transplantation Research. *Haematologica*, Vol. 98(2): 185-92.
- 33. Nooka AJ, Nabhan C. Ajay K, Zhou X, Taylor MD, Byrtek M, Miller TP, Friedberg JW, Zelenetz AD, Link BK, Cerhan JR, Dillon H, Levy D, Hirata J, Flowers CR. February 2013 (Epub ahead of print 10/2012). Examination of the follicular lymphoma international prognostic index (FLIPI) in the National LymphoCare study (NLCS): A US patient cohort treated predominantly in community practices. Annals of Oncology, Vol. 24(2): 441-8.
- 34. <u>Kruczek K, Ratterman M, Tolzien K, Sulo S. Lestingi TM, and Nabhan C. October 2013 (Epubahead of print, 9/5/2013).</u> A phase II study evaluating the toxicity and efficacy of single agent temsirolimus (Torisel) in chemotherapy-naïve castration-resistant prostate cancer. *British Journal of Cancer, Vol 109 (7), 1711-1716*
- 35. Ratterman M, Kruczek K, Sulo S, Shanafelt TD, Kay NE, and Nabhan C. September 2013. Extra-medullary chronic lymphocytic leukemia: Systematic review of cases reported between 1975 and 2012. Leukemia Research, EPub ahead of print, September 6, 2013;38(3):299-303, March 2014
- 36. Evens AM, Carson KR, Browning V, Nabhan C, Helenowski I, Islam I, Jovanovic B, Barr PM, Kolesar J, Caimi PF, Gregory SA, Gordon LI. December 2013 (Epub ahead of print, 10/20/2013). A multicenter phase 2 study incorporating high-dose rituximab and liposomal doxorubicin into the CODOX-M/IVAC regimen for untreated Burkitt lymphoma. *Annals of Oncology, Vol* 24 (12), 3076-3081
- 37. Nabhan C, Ollberding HJ, Villines D, Chiu BCH, Valdez TV, Ghielmin M, Schmitz SFH, Smith SM. November 2013. A Systematic Review of Comparative Schedule-Related Toxicities with Maintenance Rituximab in Follicular and Mantle Cell Lymphoma (Leukemia and lymphoma, EPub ahead of print, September 2, 2013), February 2014, Vol 12 (1), pages 27-32
- 38. Nabhan C, Patel A, Villines D, Tolzien K, Kelby SK, Lestingi TM. Lenalidomide monotherapy in chemotherapy-naïve castration-resistant prostate cancer: Final results of a phase II study. (Clinical Genitourinary Cancer, 10/1/2013, EPub ahead of print)
- 39. Meyer A, Cygan P, Tolzien K, Galvez AG, Bitran JD, Lestingi TM, Nabhan C. Role of Sorafenib in overcoming resistance of chemotherapy-failure castration-resistant prostate cancer (Clinical Genitourinary Cancer, Epub ahead of print, September 28, 2013), April 2014, Vol 12 (2), pages 100-105
- 40. Nabhan C. Aschebrook-Kilfoy B, Chiu BCH, Smith SM, Shanafelt TD, Evens AM, Kay NE. The impact of race, age, and sex in chronic lymphocytic leukemia: A comprehensive SEER analysis in the pre and post rituximab eras. Leukemia and lymphoma; EPub ahead of print 4/3/2014, 2014 Dec; 55(12):2778-84
- 41. Nabhan C, Aschebrook-Kilfoy B, Chiu BCH, Kruczek K, Smith SM, Evens AM. The impact of race, age, and sex in Follicular Lymphoma: A Comprehensive SEER analysis across two consecutive treatment eras. American Journal of Hematology, EPub ahead of print 3/14/2014, ;89(6):633-8, June 2014
- 42. Petrich A, Helenowski IB, Rozelle SA, Becicka RI, Galamaga R, and **Nabhan C**. Factors predicting survival in peripheral T-cell lymphoma in the United States: A population-Based analysis of 8,802 patients in the modern era. *British Journal of Haematology, Epub ahead of print (11/7/2014). 2015 Mar; 168(5): 708-18*
- 43. Petrich A, Gandhi M, Jovanvoic B, Castillo J, Rajguru S, Shah KA, Whyman JD, Lansigan F, Hernandez-Ilizaliturri FJ, Lee LX, Barta SK, Melinamani S, Karmali R, Adeimy C, Smith S, Dalal N, **Nabhan C**, Peace D, Vose J, Evens AM, Shah NM, Fenske TS, Zelenetz A, Landsburg DJ,

- Howlett C, Mato A, Reddy N, Handler C, Cohen J, Song K, Sun H, Press O, Cassaday R, Li S, Sohani AR, Abramson JS. Impact of Induction Regimen and Stem Cell Transplantation on Outcomes in Patients with Double Hit Lymphoma: a large Multicenter Retrospective Analysis. (Blood. EPub ahead of Print 2014 Aug 26), Vol 124 (15), 2354-2361, October 2014
- 44. Abramson JA, Feldman T, Kroll-Desrosiers AR, Muffly LS, Winer E, Flowers CR, Lansigan F, Nabhan C, Nastoupil L, Nath R, Goy A, Castillo JJ, Woda B, Rosen ST, Smith SM, Evens AM. Peripheral T-cell lymphomas (PTCL) in the modern era: Prognosis and impact of frontline therapy in a large US multicenter cohort. Annals of Oncology, Vol 25 (11), 2211-2217, 11/2014
- 45. Nabhan C, Byrtek M, Rai A, Dawson K, Zhou X, Link BK, Friedberg JW, Zelenetz A, Maurer MJ, Cerhan JR, Flowers CR. Disease characteristics, treatment patterns, prognosis, outcomes, and lymphoma-related mortality of follicular lymphoma in the oldest old. *Br Journal Haematology*, 2015 Jul; 170 (1):85-95
- 46. Carson KR, Riedell P, Lynch R, Nabhan C, Wildes TM, Liu W, Ganti A, Roop R, Sanfilippo KM, O'Brian K, Liu J, Bartlett NL, Cashen A, Wagner-Johnston N, Fehniger TA, Colditz GA. Comparative effectiveness of anthracycline-containing chemotherapy in United States Veterans age 80 and older with diffuse large B-cell lymphoma. J Geriatr Oncol, (Epub ahead of print, Jan 19, 2015)
- 47. Eggener SE, Cifu A, and Nabhan C. Prostate Cancer Screening. JAMA. 2015 Aug 25; 314(8): 825-6
- 48. George DJ, **Nabhan C**, DeVries T, Whitmore JB, Gomella LG. Survival outcomes of sipuleucel-T phase 3 studies: Impact of control arm crossover to salvage immunotherapy. *Cancer Immunology research*, (E-Pub ahead of print, 5/5/2015). 2015 Sep; 3(9):1063-9
- 49. Evens AM, Kanakry JA, Sehn LH, Kritharis A, Feldman T, Kroll A, Gascoyne RD, Abramson JS, Petrich AM, Hernandez-Ilizliturri FJ, Al-Mansour Z, Adeimy C, Hemminger J, Bartlett NL, Mato A, Caimi PF, Advani RH, Klein AK, Nabhan C, Smith SM, Fabregas JC, Lossos IS, Press OW, Fenske TM, Friedberg JW, Vose JM, Blum KA. Gray zone lymphoma with features intermediate between classical Hodgkin lymphoma and diffuse large B-cell ymphoma: Characteristics, outcomes, and prognostication among a large multicenter cohort. Am J Hematol. (2015 Jun 4, EPub ahead of print). 2015 Sep. 90(9):778-83
- 50. Landsburg DJ, Petrich AM, Abramson JS, Sohani AR, Press O, Cassaday R, Chavez JC, Song K, Zelenetz AD, Gandhi M, Shah N, Fenske TS, Jaso J, Medeiros LJ, Yang DT, **Nabhan C**. The impact of partner gene rearrangement on outcomes in "double-hit" non-Hodgkin lymphoma patients. (*Cancer, Nov 13, 2015; Epub ahead of print*)
- 51. Guo A, Lu P, <u>Galanina N</u>, **Nabhan C**, Smith SM, Coleman M, Wang LY. Molecular basis for differential clinical response of ibrutinib in unmutated versus mutated CLL: Unmutated CLL has higher BTK-dependent cell proliferation. (*Oncotarget, EPub ahead of print 12/22/2015*)
- 52. Islam P, Daniel C, Strelec L, Kaye AH, Brooks S, Nasta S, Porter DL, Svoboda J, Nabhan C, Schuster SJ, Mato AR. Ibrutinib-induced pneumonitis in patients with chronic lymphocytic leukemia. (Blood, Epub ahead of print 12/2015)
- 53. Strati P, Uhm JH, Kaufmann T, **Nabhan C**, Parikh SA, Hanson CA, Chaffee KG, Achenbach SJ, Call TG, Shanafelt TD. Prevelence and characteristics of central nervous system involvement by chronic lymphocytic leukemia. (*Haematologica*, *Epub ahead of print 1/27/2016*)
- 54. Nabhan C, Chaffee KG, Slager, SL, <u>Galanina N</u>, Achenbach SJ, Schwager SM, Kay NE, Shanafelt TD. Analysis of racial variations in disease characteristics, treatment patterns, and outcomes of patients with chronic lymphocytic leukemia. (*In press*)

- 55. **Nabhan C**, Zhou X, Day BM, Zelenetz AD, Friedberg JW, Cerhan JR, Link BK, Flowers CR. Disease characteristics, treatment, and outcome differences between men and women with follicular lymphoma in the United States (*In Press, Leukemia and Lymphoma*)
- 56. Mato A, Nabhan C, Kay NE, Weiss MA, Lamanna N, Kipps TJ, Grinblatt DL, Flinn IW, Kozloff MF, Flowers CR, Farber CM, Kiselev P, Swern AS, Sullivan K, Flick ED, Sharman JP. Clinical and demographic features, and practice patterns for patients with CLL in clinical practice: analysis of the Connect CLL registry. (Submitted)
- 57. **Nabhan C**, Smith SM, Cifu AC. Surveillance imaging for Hodgkin and Diffuse large B-Cell lymphoma patients who are in remission. (JAMA; In Press)

### Review Articles/Editorials/Commentaries

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- 59. Nabhan C, Krett NL, Gandhi V, Rosen ST. November 2001. Gemcitabine in Hematologic malignancies. *Current Opinions in Oncology, Vol 13: 514-521.*
- 60. Tallman MS, **Nabhan C**, Feusner J, Rowe J. February 2002. Acute Promyelocytic Leukemia: Evolving Therapeutic Strategies. *Blood*, *Vol* 99: 759-167.
- 61. **Nabhan C**, Tallman MS. March 2002. Early Phase I and II clinical trials in the development of Gemtuzumab Ozogamicin. *Clinical Lymphoma and myeloma*, Vol 2, Suppl 1, S19-S23.
- 62. Tallman MS, Nabhan C. September 2002. Management of acute promyelocytic leukemia (APL). Current Oncology Reports, Vol 4 Issue 5, 381-389.
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- 64. Kwaan HC. **Nabhan C.** December 2003. Hereditary and Acquired Defects in the fibrinolytic System associated with Thrombosis. *Hematology and Oncology clinics of North America*. *Vol* 17, 103-114.
- Nabhan C, Kwaan HC. December 2003. Current concepts in the diagnosis and management of thrombotic thrombocytopenic purpura (TTP). Hematology and Oncology clinics of North America, Vol 17, 177-199.
- 66. **Nabhan C**, RB Gartenhaus, Tallman MS. May 2004. The role of nucleoside analogues in combination therapy in chronic lymphocytic leukemia. Dawn of a new era. *Leukemia Research*, *Vol 28*, 5: 429-442.
- 67. Nabhan C. January 2005. Chemotherapy for advanced prostate cancer. N Engl J Med, Vol 13, 352 (2), 200-201.
- 68. **Nabhan C.** September 2005. The emerging role of Alemtuzumab (Campath-1H) in Chronic Lymphocytic Leukemia: 2005 and Beyond. *Clinical Lymphoma and Myeloma*, *Vol 6*, *N 2*, *Page 115 –121*.
- 69. Nabhan C. September 2005. Should we transplant indolent lymphoma? J. Clin Oncology. Vol 23, No 25, 6263-6264.
- Nabhan C, Bitran JD. October 2005. Erlotinib in advanced non-small cell lung cancer. N Engl J Med. 353 (16) 1739-1741.

- 71. **Nabhan C**, Bitran JD. November 2005. Chronic Lymphocytic Leukemia: To Transplant or not to transplant. That is the question. *J Clin Oncology. Vol 23, No 31, 8126-8127.*
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- 73. **Nabhan C.** Coutre S. Hillmen P. February 2007. Minimal Residual Disease in Chronic Lymphocytic Leukemia: Is it ready for primetime? *British J. Haematology, Vol 136 (3), 379-392.*
- 74. Nabhan C. March 2007. It's Follicular... So, Why CHOP? J Clin Oncol. 25 (7), 915-916.
- 75. **Nabhan C.** July 2007. Chronic lymphocytic leukemia: Is it time for risk stratification? *Current Medical Literature –Leukemia and Lymphoma*, *Vol* (15) 33-39
- 76. **Nabhan C.** March 2008, Front-Line treatment in Chronic Lymphocytic Leukemia: A Risk Stratified approach. *Clinical Leukemia*.
- 77. **Nabhan C**, Shanafelt TD, Kay NE. May 2008. Controversies in the front-line management of chronic lymphocytic leukemia. *Leukemia Research*, 32(5), 679-688.
- 78. **Nabhan C.** May 2008. Is chemotherapy the standard in asymptomatic androgen-independent prostate cancer? *J. Clin Oncol. 26 (14), 2413-2414.*
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- 80. **Nabhan C**, Ragam A, Bitran JD, Mehta J. September 2010 (Epub ahead of print 4/2010). Bone marrow transplantation for mantle cell lymphoma: Is it the standard of care? *Bone Marrow Transplantation*, Vol 45 (9), 1379-1387.
- 81. **Nabhan C.** November 2010. Sipuleucel-T in Castration-Resistant Prostate Cancer, *N Engl J Med, Vol* 363 (20), *P*: 1966-1967.
- 82. **Nabhan C**, Moore C, Bitran JD. February 2011 (Epub ahead of print 12/2010). Disclosing the Cancer Diagnosis: the Myth and the Truth. *J Clin Oncol.* 29(6):e145-6.
- 83. Nabhan C, <u>Dalal N</u>, Mehta J, Kay NE. March 2011. Biologic Therapy for Chronic Lymphocytic Leukemia: Frame Work for Future Therapies. *Leukemia and Lymphoma, Vol* 52 (3), 374-386.
- 84. **Nabhan C** and Kay NE. March 2011. The emerging role of ofatumumab in chronic lymphocytic leukemia. *Clinical Medicine Insights: Oncology*, 24; 5:45-53.
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- 67. Evens AM, Carson KR, Kolesar JM, **Nabhan C**, Barr P, Caimi PF, Gregory SA, Gordon LI. Results of a phase 2 multicenter study of the addition of rituximab (R) to CODOX-M/IVAC for untreated Burkitt's lymphoma (BL): Impact of plasma and cerebrospinal fluid (CSF) R levels. Poster presentation at the 13<sup>th</sup> annual ICML meeting, Lugano, Switzerland, 2013
- 68. Nabhan C, Bytrek M, Latta S, Dawson K, Zhou X, Link BK, Friedberg J, Cerhan JR, Dillon H, Flowers CR. Disease characteristics, patterns of care, and outcomes of follicular lymphoma (FL) in the oldest old: Report from the US National Lymphocare Study (NLCS). Accepted as an oral podium presentation at the 13<sup>th</sup> annual ICML meeting, Lugano, Switzerland, 2013
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- 70. **Nabhan C**, Byrtek M, Dawson K, Zhou X, Link BK, Friedberg JW, Zelenetz AD, Cerhan JR. Flowers CR. A proposed prognostic model in the oldest old (>80 years) follicular lymphoma patients. Accepted as a poster at the ASH-2013 meeting, New Orleans, LA
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- 72. Jasielec J, Peace D, Edwards S, Tolzien K, Smith SM, and Nabhan C. Single Agent Ofatumumab in Patients with Relapsed and/or Refractory Diffuse Large B-cell Lymphoma (DLBCL): Results of a Phase II Open Label Study. *Published in the ASH-2013 meeting, New Orleans, LA*.
- 73. Nastoupil LJ, Rai A, Lipscomb J, **Nabhan C**, Flowers CR. Disease characteristics, patterns of care, and outcomes of Follicular Lymphoma in the Oldest Old. *Accepted as a poster at the ASH-2013 meeting, New Orleans, LA*
- 74. Karmali R, De Vita M, Petrich AM, Nabhan C, Kruczek K, Raizer J, McFarland D, Peace D, Lukas R, Basu S, Gregory SA, Venugopal P. Multicenter analysis of primary CNS lymphoma: Patients characteristics, Treatment Patterns, and Survival. Accepted as a poster at the ASH-2013 meeting, New Orleans, LA.
- 75. Petrich AM, Nabhan C, Galamaga R, and Helenowski I. Factors affecting survival in peripheral T-Cell Lymphoma (PTCL): A population-based analysis of 8,802 patients. Accepted as an oral presentation at the T-Cell Consortium meeting, San Francisco, January 2014. Winning the young investigator award.
- 76. Abramson JS, Feldman T, Kroll A, Muffly LS, Winer E, Flowers C, Lansigan F, Nabhan C, Nastoupil L, Nath R, Castillo JJ, Goy A, Woda B, Smith SM, Rosen ST, Evens AM. Survival of peripheral T-cell lymphoma (PTCL): Impact of therapy and comorbidities in a multicenter cohort. Submitted to ASCO-2014, Chicago, IL
- 77. Nabhan C, Byrtek M, Dawson KL, Zhou X, Ziemiecki R, Zelenetz AD, Friedberg JW, Cerhan JW, Flowers CR. Differences in disease characteristics, treatment patterns, and outcomes between men and women with follicular lymphoma: prospective evaluation of 2650 US patients. Accepted as a poster at the ASCO-2014, Chicago, IL
- 78. Jasielec J, Kimball AS, Cohen KS, Kline JP, Rapoport A, **Nabhan C**, Petrich A, Thomas SP, Doyle LA, Stadler WM, Karrison T, Smith SM. Temsirolimus and lenalidomide has substantial activity in relapsed/refractory Hodgkin Lymphoma including patients with prior exposure to brentuximab vedotin. Accepted as a poster at the ASCO-2014, Chicago, IL
- 79. Nabhan C, Galanina N, Kay NE, Mato A, Grinblatt DL, Kipps TJ, Lamanna N, Swern AS, Street T, Weiss MA, Flowers CR. Patterns of care of aged chronic lymphocytic leukemia (CLL) patients in the United States: Systematic Analysis of 457 patients in the Connect Registry. Accepted as a poster at the ASH-2014, San Francisco
- 80. Gandhi MD, Smith SM, Nabhan C, Evens AM, Ma S, Winter JN, Gordon LI, Petrich AM. Brentuximab vedotin (BV) plus Rituximab as front-line therapy for patients with CD30+ and/or Epstein Barr Virus (EBV)+ lymphoma: Phase I results of an ongoing phase I-II Study. Accepted as a poster at the ASH-2014, San Francisco.
- 81. Nabhan C, Foss F, Horwitz S, Carson K, Rosen ST, Federico M, Gisselbrecht C, His E, Pinter-Brown L, Pro B, Smith SM. Patterns of Radiotherapy (RT) for T-Cell non-Hodgkin Lymphoma (TCL) in the United States. Submitted to ASH-2014, San Francisco
- 82. Nabhan C, Rabe KG, Slager SL, Achenbach SJ, Schwager SM, Kay NE, Shanafelt TD. Racial Variations in Disease characteristics, presentations, treatments, and outcomes in chronic lymphocytic Leukemia (CLL). Accepted as a poster at the ASH-2014, San Francisco

- 83. Matasar MJ, Swartz CL, Elkin EB, and **Nabhan C**. Extended use of Rituximab in Older Adults with Non-Hodgkin Lymphoma. *Accepted as a poster at the ASH-2014, San Francisco, CA*
- 84. Sharman JP, Mato A, Kay NE, Kipps TJ, Lamanna N, Weiss MA, Nabhan C, Flinn IW, Grinblatt DL, Kozloff MF, Michael CF, Sullivan K, Street T, Swern AS, Flowers CF. Demographics by age group (AG) and line of therapy (LOT) in chronic lymphocytic leukemia (CLL) patients treated in US practices from the Connect CLL Registry. Accepted as a poster at the ASH-2014, San Francisco, CA
- 85. Mato A, Flowers CR, Farber CM, Weiss MA, Kipps TJ, Kozloff MF, Nabhan C, Flinn IW, Grinblatt DL, Lamanna N, Sullivan K, Kiselev P, Flick E, Foon K, Swern AS, Sharman JP. Prognostic Testing Patterns in CLL Patients Treated in US Practices from the Connect® CLL Registry. Accepted as a poster discussion at the ASCO-2015 meeting, Chicago, IL
- 86. Landsburg DJ, Petrich AM, Abramson JS, Sohani A, Press OW, Cassaday RD, Chavez JC, Song KW, Zelenetz AD, Gandhi M, Shah MM, Fenske T, Jasso J, Medeiros JL, Yang DT, and Nabhan C. Analysis of "double hit lymphoma" cases by genetic type. Accepted as a poster presentation at the ASCO-2015 meeting, Chicago, IL
- 87. Evens, AM, DO, Hamlin PA, MD, Nabhan C, Advani RH, MD, Fanale, Petrich A, Smith SM, Bociek G, Winter J, Gordon LI. Sequential Brentuximab Vedotin (BV) With Adriamycin, Vinblastine, and Dacarbazine (AVD) for Older Patients with Untreated Hodgkin Lymphoma: Initial Findings from a Phase II Multicenter Study. Accepted as an oral presentation at the 13<sup>th</sup> International ICML meeting, Lugano, Switzerland, June 2015
- 88. Nabhan C, Foss F, Horwitz S, Pinter-Brown L, Carson K, Rosen ST, Federico M, Gisselbrecht C, His E, Pro B, Smith SM. Characteristics and Patterns of Care of Patients ≥70 years with T-cell non-Hodgkin Lymphoma in the United States. Accepted as a poster at the 13<sup>th</sup> International ICML meeting, Lugano, Switzerland, June 2015
- 89. Landsburg DJ, Petrich AM, Abramson JS, Sohani AR, Press O, Cassaday R, Chavez JC, Song K, Zelenetz AD, Gandhi M, Fenske TS, Medeiros J, Yang DT, **Nabhan C**. Comprehensive analysis of "double hit" lymphoma by genetic type. Accepted as a poster at the 13<sup>th</sup> international ICML meeting, Lugano, Switzerland, 2015
- 90. Evens AM, Kanakry JA, Sehn LH, Kritharis A, Feldman T, Kroll A, Gascoyne RD, Petrich AM, Abramson JS, Hernandez-Ilizaliturri FJ, Al-Mansour Z, Adeimy C, Hemminger J, Bartlett NL, Mato A, Caimi PF, Advani RH, Klein AK, Nabhan C, Smith SM, Lossos IS, Press OW, Fenske T, Friedberg JW, Vose JM, Blum KA. Gray zone lymphoma with features intermediate between classical Hodgkin lymphoma and diffuse large B-cell lymphoma: Characteristics, outcomes, and prognostication among a large multicenter cohort. Accepted as an oral presentation at the 13<sup>th</sup> international ICML meeting, Lugano, Switzerland, 2015
- 91. Flowers CR, Nabhan C, Kay NE, Mato A, Lamanna N, Grinblatt DL, Kipps TJ, Kozloff MF, Sullivan K, Flick E, Kiselev P, Bhushan S, Swern AS, Sharman JP. Reasons for initiation of therapy and early outcomes for patients with RAI 0/1 Chronic Lymphocytic Leukemia (CLL): An analysis of the Connect CLL Cohort Study. Accepted as a poster presentation at the ASH-2015, Orlando, FL
- 92. Mato AM, Nabhan C, Flowers CR, Kay NE, Kipps TJ, Grinblatt DL, Lamanna N, Kozloff MF, Sullivan K, Flick E, Kiselev P, Bhushan S, Bhushan S, Swern AS, Sharman JP. Treatment Selection and Practice Patterns for the Management of High-Risk Chronic Lymphocytic Leukemia (CLL) in the US. An Analysis of the Impact of Risk Stratification on Treatment Selection from the Connect CLL<sup>®</sup> Registry. Accepted as an Oral Presentation at the ASH-2015, Orlando, FL

- Guo A, Lu P, Galanina N, Nabhan C, Smith SM, Coleman M, Wang LY. Higher BTK-Dependent cell proliferation in unmutated chronic lymphocytic leukemia confers increased sensitivity to ibrutinib. Submitted to ASH-2015, Orlando, FL
- Malecek MK, Rozell S, Chu B, Trifilio S, Galanina N, Nabhan C, Petrich AM. Risk factors for CNS relapse among patients with DLBCL treated with EPOCH-R. Accepted as a poster presentation at the ASH-2015, Orlando, FL
- 95. Matasar MJ, Atoria CL, Elkin EB, **Nabhan C**. Patterns of use and toxicity of maintenance rituximab in older adults with non-Hodgkin lymphoma in the US. Accepted as an Oral Presentation at the ASH-2015, Orlando, FL
- Szmulewitz RZ, Nabhan C, O'Donnell PH, Kach J, Karrison T, Martinez E, Stadler WM. A
  phase I/II trial of enzalutamide plus the glucocorticoid receptor antagonist mifepristome for
  patients with metastatic castration resistant prostate cancer (mCRPC). Submitted to ASCO2016, Chicago, IL
- 97. Epperla N, Hamadani M, Ahn KW, Oak E, Cashen AF, Kanate AS, Calzada O, Farmer ZL, Tallarico M, Nabhan C, Costa LJ, Kenkre VP, Ghosh N, Cohen JB, Hari P, Fenske TS. Predictive factors and outcomes for ibrutinib therapy in relapsed/refractory mantle cell lymphoma. Submitted to ASCO-2016, Chicago, IL.

#### Work submitted to peer-reviewed journals or under preparation:

 Corman JM, Hall S, Nabhan C, Ferrari A, Armstrong A, Dawson N, Murdock M, Sims R, Stewart F, Sheikh N, Petrylak D. Full characterization and clinical correlates of cellular and humoral immune responses against prostate antigens generated by sipuleucel-T among metastatic castration-resistant prostate cancer patients in an open-label clinical trial (Submitted)

#### Books:

#### As author:

 Nabhan C, and Bergan R. Chemoprevention in Prostate Cancer. In Cancer Chemoprevention. Bergan R, Editor, pp 103-136, 2001

#### As editor:

 Nabhan C. Risk Stratification in the management of chronic lymphocytic leukemia (CLL). Nova Science Publishers, Inc. 2007, (Nabhan C, Editor)

# Book chapters:

- 1. Tallman MS, **Nabhan C**. Acute Myeloid Leukemia and Myelodysplasia. In American Society of Hematology Self Assessment Program (ASH-SAP), 1<sup>st</sup> edition, December 2002
- Nabhan C, Tallman MS. Arsenicals: Past, present, and future. In Biologic Therapies of leukemias, Kalacyio M, Editor, pp 189-205, May 2003
- 3. Tallman MS, Nabhan C, Camitta B. Acute Myeloid Leukemia. In American Society of Hematology Self Assessment Program (ASH-SAP), 2<sup>nd</sup> edition, released December 2004

# Media and Press experience/exposure

6/05	Radio/Webcast guest for www.healthtalk.com (Now: http://www.everydayhealth.com/leukemia/webcasts/cll-updates-more-
	treatments-more-choices-transcript-1 aspx): Topic: CLL more options and more treatments. Hosted by: Andrew Schorr.
2007	Helped in designing and writing a website: <a href="www.cllactioplan.com">www.cllactioplan.com</a> for patients and families to better understand CLL biology and prognostic factors. Site sponsored by Bayer Pharmaceuticals.
2/10/08	Interviewed by Oncology Times to discuss findings of research study on racial disparities in follicular lymphoma: <a href="http://iournals.lww.com/oncologytimes/Fulltext/2008/02101/LymphoCare_Study_">http://iournals.lww.com/oncologytimes/Fulltext/2008/02101/LymphoCare_Study_</a>
	Provides Insights into Management 15 aspx
3/9/10	Interview with WBIG-AM 1280 AM Home of Fox Sports Radio (The Big Wake Up Call Show): Discussion on CLL and new treatment and the applicability of chemoirmmunotherapy in CLL.
6/4/10	Interview with local ABC-7 News medical team about Provenge immunotherapy applications in prostate cancer and its recent FDA approval.
6/5/10	Investor-related meeting about Provenge and its use in prostate cancer and its role in patients with advanced disease. Meeting conducted during ASCO 2010 event in Chicago, IL.
6/13/10	Interview with Harv Roman on WCEV-AM (1450), local Chicago radio station discussing balancing careers with cancer therapy in patients with cancer.
6/17/10	Interview with Tom Levine WFIW-AM 1390 (Southern IL station), 25 minutes live talk show about survivorship and challenges for cancer patients as they face career changes.
10/12/10	Interview with Ron Winslow, reporter for the <i>Wall Street Journal</i> regarding new treatment options for castration-resistant prostate cancer. <a href="http://online.wsj.com/article/SB1000142405274870379410457554643310">http://online.wsj.com/article/SB1000142405274870379410457554643310</a> 9035578 <a href="http://online.wsj.com/article/SB1000142405274870379410457554643310">http://online.wsj.com/article/SB1000142405274870379410457554643310</a>
11/25/10	Report written for Oncology Times about Provenge and its approval as an immunotherapy for the treatment of castration-resistant and metastatic prostate cancer.  http://journals.iww.com/oncologytimes/blog/voices/pages/post.aspx?PostID=13
2/1/12	Media interview with Anette Breindl; Bio-world Today regarding survival benefits of Sipuleucel-T in Castrate-Resistant Prostate Cancer.
2/3/12	Video Interview with Andrew Schor from patientpower.info; (website that reviews health care and advances in oncology regarding metastatic prostate cancer and survival benefits of Sipuleucel-T with immunotherapy for advanced prostate cancer), <a href="https://www.patientpower.info/video/living-longer">www.patientpower.info/video/living-longer</a>

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12/23/15

Interview with <a href="www.hfma.org">www.hfma.org</a> to discuss HER/EMR implementation as well as My-Chart and the patient portal experience at the University of Chicago. Article at: <a href="https://www.hfma.org/Content.aspx?id=46000">https://www.hfma.org/Content.aspx?id=46000</a>

#### Clinical trials that are closed and unpublished

 Phase II clinical trial evaluating efficacy and toxicity of single agent of atumumab in patients with relapsed and/or refractory diffuse large B-cell non-Hodgkin lymphoma who are transplantineligible. (Nabhan C: PI)

# Clinical trials approved (funding secured): Investigator-initiated:

- Multicenter phase II study of bendamustine, Obinutuzumab, and dexamethasone (BOD) in elderly patients > 70 years of age with diffuse large B-cell non-Hodgkin lymphoma (DLBCL) who are deemed suboptimal for R-CHOP. (Nabhan C: PI), Multicenter.
- 2. A prospective multi-center phase I/II study incorporating lenalidomide into dose-adjusted EPOCH plus rituximab in patients with double hit lymphomas (Nabhan C: PI), Multicenter
- A randomized Phase II Prospective study comparing docetaxel plus enzalutamide versus docetaxel alone in castration-resistant prostate cancer patients progressing on enzalutamide. (Nabhan C: PI), Multicenter through the PCCTC.

#### FUNDING (IIT=investigator-initiated trial)

# **Approved**

IIT: Multicenter phase II study of Bendamustine, Obinutuzumab, and Dexamethasone (BOD) in elderly patients > 70 years of age with diffuse large B-cell non-Hodgkin lymphoma (DLBCL) who are deemed suboptimal for R-CHOP. Funds from Genentech, Inc (\$ 400,000). My role: Study lead and Principle Investigator

IIT: A prospective multi-center phase I/II study incorporating lenalidomide into dose-adjusted EPOCH plus rituximab in patients with double hit lymphomas. Funds from Celgene (\$ 853,000). My role: Study lead and Principle Investigator.

IfT: A prospective randomized phase II study comparing docetaxel alone versus docetaxel plus enzalutamide in castration-resistant prostate cancer (CRPC) patients progressing on enzalutamide. Funds from Medivation/Astellas (\$1.800,000.00). My role: Study lead and Principle Investigator

Sequential brentuximab vedotin and AVD chemotherapy in newly diagnosed patients >60 years of age with Hodgkin Lymphoma. My role: Co-Investigator and local PI

PET-Adapted therapy in newly diagnosed bulky Hodgkin Lymphoma patients younger than 60 years of age. My role: Co-Investigator and local PI

Alliance 13-0119: Prospective randomized study comparing consolidative autologous stem cell transplantation to systemic chemotherapy in newly diagnosed primary DLBCL CNS Lymphoma patients. My role: Co-investigator and local PI

IPI-145 in relapsed/refractory indolent non-Hodgkin lymphoma. My role: Co-investigator and local PI

Brentuximab plus rituximab as a front-line therapy in newly diagnosed PTLD and CD30+ DLBCL patients. My role: **Co-investigator** and **local PI** 

Phase III study comparing TAK700 versus bicalatumide plus ADT in newly diagnosed castrate sensitive metastatic prostate cancer patients. My role: Co-investigator and local Pl.

Past:	
2004 - 2007	The National LymphoCare Study. An observational study of treatment, outcomes and prognosis in patients with follicular non-Hodgkin's lymphoma. Sponsor: Genentech: \$ 57,650.00. My role: Sub-investigator
2004 - 2009	A Phase I/II Open-Label Study of Clofarabine in Patients with Relapsed or Refractory Diffuse Large Cell B-Cell NHL.
	Sponsor: Genzyme: \$ 170,500.00 My role: Principle Investigator; IST
2004 - 2008	A Phase II Study Evaluating the Safety and Efficacy of Oxaliplatin and Taxotere in the First Therapy of Stage IV or IIIB Non-Small Cell Lung Cancer. Sponsor: Sanofi: \$ 86,870.00, My role: Principle Investigator, IST
2004 - 2009	A phase II Pilot Study Investigating the Efficacy and Activity of Single agent GM-CSF (Leukine TM) Maintenance approach in Androgen-Independent Prostate Cancer Patients Responding to Taxotere Chemotherapy.  Sponsor: Berlex: \$ 127,224.00. My role: Principle Investigator; IST
2005 - 2008	A phase II Study Investigating the Efficacy and Activity of Single Agent Erlotinib in Chemotherapy-Naïve Androgen-Independent Prostate Cancer Sponsor: Genentech: \$ 74,875.00. My role: Principle investigator; IST
	opalisar. Generalisti, & 14,010.00. Wy fold. I fillopia investigator, for
2006 - 2011	A Phase I/II study to evaluate the ability of Sorafenib in overcoming resistance to systemic chemotherapy in androgen-independent prostate cancer (AIPC) Sponsor: Bayer: \$ 114,577.32. My role: Principle investigator, IST
2006 - 2010	Phase II study investigating the efficacy of VELCADE, Rituximab,
	Cyclophosphamide, and Decadron (VRCD regimen) in front-line therapy of patients with low-grade Lymphoma
	Sponsor: Millennium: \$ 85,500.00. My role: investigator-initiated; IST
2006 - 2011	Phase I Study Investigating the Safety and Feasibility of Combining Imatinib Mesylate Gleevec with Sorafenib in Patients with Androgen-Independent Chemotherapy-Failure Prostate Cancer
	Sponsor: Novartis: \$ 121,500.00, My role: Principle Investigator; IST
2008 - 2012	A Phase II Study Evaluating the Toxicity and Efficacy of Single Agent Lenalidomide (Revlimid) in Chemotherapy-Naïve Androgen-Independent Prostate Cancer Patients
	Sponsor: Celgene: \$ 155,300.00. My role: Principle investigator; IST

2009 - 2012	A Phase II Study Evaluating the Toxicity and Efficacy of Single Agent Temsorilmus (Torisel) in Chemotherapy-Naïve Castration Resistant Prostate Cancer Patients  Sponsor: Pfizer: \$ 115,400.00. My role: Principle investigator; IST
2010 - 2013	Phase II Study of Ofatumumab in refractory and/or relapsed DLBCL. Sponsor: GSK: \$ 396,375. My role: Principle investigator; IST

# SELECTED INVITED SPEAKING

11/01	Eastern Cooperative Oncology Group (ECOG) Young Investigator Meeting: Phase I study combining rituximab and Campath-1H in refractory and/or relapsed CLL, Miami FL
12/07	American Society of Hematology Meeting: Patterns of care in Follicular Lymphoma: Are minorities being treated differently? Report from the National LymphoCare Study (NLCS), San Francisco, CA
12/09	American Society of Hematology Meeting: Clofarabine has single agent activity in relapsed and refractory non-Hodgkin lymphoma including Rituximab-refractory patients. New Orleans, LA
6/13	International Congress on malignant Lymphoma (ICML), 13 <sup>th</sup> annual meeting: Disease characteristics, treatment patterns, and outcomes of follicular lymphoma in the oldest old: report from the US National Lymphocare Study, Lugano, Switzerland
5/14	International Ultmann Chicago Lymphoma Symposium (ICLS). Diffuse Large B Cell lymphoma in the elderly. Chicago, IL
7/14	American Association of Clinical Chemistry. Workshop titled: Towards better patient care and satisfaction. Chicago, IL
8/14	American Society for Clinical Laboratory Science Annual Meeting. Dissecting Follicular Lymphoma: High versus low risk. Chicago, IL
6/15	European Hematology Association (EHA): 20 <sup>th</sup> Annual Meeting. Double Hit Lymphoma: Time for Targeted Therapy. Vienna, Austria

# Grand Rounds Presentations/ and Regional/National Seminars

11/01	Special Seminar: Rationale for designing therapeutics in select hematologic. <i>University of Michigan, Ann Arbor</i>
5/02	Potential new nucleoside analogues in the treatment of multiple myeloma. Hematology and Oncology Grand Rounds at Robert H. Lurie Comprehensive Cancer Center, Chicago
8/03	Chronic Lymphocytic Leukemia, A New Paradigm in the 21 <sup>st</sup> Century. Department of Internal Medicine Grand Rounds. Advocate Lutheran General Hospital, Park Ridge, Illinois, August, 2003
9/04	Prostate Cancer. Past, Present, and Future. Department of Internal Medicine Grand Rounds, Advocate Lutheran General Hospital, Park Ridge. IL

10/06	Current and Future treatment of CLL. Hematology/Oncology Grand Rounds, University of Southern California, Norris Cancer Center
12/07	CLL: 2007 and Beyond. Department of Medicine Grand Rounds. Rosalind Franklin Medical School, North Chicago
2/08	A Risk-Stratified Approach to CLL. Hematology and Oncology Grand Rounds. University of Alabama, Birmingham
3/09	Relapsed and refractory indolent non-Hodgkin Lymphoma. Rush University
4/09	Chemotherapy Toxicity: Presentation to general surgery residents
8/10	Updates on CLL: 2010 and beyond. Department of Medicine Grand Rounds, Advocate Lutheran General Hospital, Park Ridge, IL
4/11	CLL in 2011: Department of Medicine Grand Rounds at Advocate Illinois Masonic Hospital, Chicago
11/11	Arzerra in CLL. Grand Rounds at the Illinois University and Simmons Cancer Institute.
2/12	Lymphomas in 2012: Dept. of Family Medicine Grand rounds Lutheran General Hospital
3/12	Immunotherapy for Prostate Cancer, Dept. of Surgery/Urology Grand Rounds at UIC
4/12	Immunotherapy for prostate Cancer, Dept. of Medicine Grand Rounds, Christ Hospital, IL
5/12	Maintenance Rituximab in Lymphoma: Discussion, Moll Cancer Center, Cleveland, OH
8/12	Bendamustine in CLL. Rush University Medical Center
1/13	Bendamustine and its indications. Grand Rounds at Mount Sinai Hospital, Chicago, IL
2/14	CLL: Past, Present, and Future. Lecture in the 25 <sup>th</sup> Annual Cancer Updates-2014 Annual Symposium hosted by the Baptist Health System, San Antonio, TX
4/14	Lymphoma Trials Updates: 2014. Presentation at the 19 <sup>th</sup> annual Phase II Consortium sponsored by the University of Chicago, Gleacher center, Chicago, IL
6/14	Prostate Cancer Educational forum for the American urological Association (AUA). Case presentations and treatment of advanced castration-resistant prostate cancer
9/15	Follicular Lymphoma prognostication. The University of Chicago Cancer Center Translational Science presentation.
11/15	LEAN: Now or Never. The Hematology/Oncology section Grand rounds. The University of Chicago Medicine.
12/15	Double Hit Lymphomas: Call for Action. Grand Rounds, Division of Hematology/Oncology, The University of Wisconsin Comprehensive Cancer Center, Madison, WI.
3/16	Double Hit Lymphomas. Grand rounds at Advocate Lutheran General Hospital, Park Ridge, IL
3/16	Updates for ASH (American Society of Hematology). Regional seminar sponsored by the University of Chicago Medicine
3/16	Advances in Cancer Management for the Primary Care physician: Prostate Cancer Screening Updates, Regional Seminar sponsored by Cancer Treatment Center of America.

# Regional Nursing Seminars

9/03	CLL: Hot Topics Presentation. Advocate Lutheran General Hospital
10/03	Chronic Lymphocytic Leukemia and a glance at low-grade Non-Hodgkin's Lymphoma.
	Holy Family Medical Center Annual Lymphoma and Leukemia Conference.
12/04	New Therapies for Prostate Cancer. Hot Topics Presentation, Lutheran General Hospital

6/06	CLL introduction: Nurses talk for Lutheran General Hospital nurses
11/06	Prostate Cancer Targeted therapies: Presentation to the Oncology Nursing Society (ONS), Chicago Chapter.
3/12	Lymphoma: Response and Therapy: Presentation to nurses at Lutheran General Hospital
3/12	Updates on Large Cell Lymphoma: Presentation to nurses at Lutheran General Hospital
Lectures t	o Patients and families
4/06	Prostate Cancer for Patients. Talk to US Too prostate support group
1/07	Town Hall Meeting for patients with leukemia, lymphoma, and MDS. Sponsored by Leukemia Research Foundation
2/09	Cancer: Evolution in progress. Presentation to the MATSI patient support group.
6/09	New options for prostate cancer: Report from ASCO 2009. Seminar to US Too patient support group
1/10	Town Hall Meeting for patients with leukemia, lymphoma, and MDS. Sponsored by Leukemia Research Foundation, Chicago, IL
2/10	Lupron no longer works: what's next? Presentation to US Too patient support group
6/10	Balancing careers with cancer. Talk to cancer patients and their families
1/12	<b>Town Hall Meeting</b> for patients with leukemia, lymphoma, and MDS. Sponsored by Leukemia Research Foundation, Chicago, IL
7/12	Updates on Prostate Cancer. US Too presentation
9/12	New treatments for prostate cancer: Community patients outreach program sponsored by Advocate Lutheran General Hospital
5/13	Lymphoma Workshop for patients and families: Program sponsored by the Lymphoma Research Foundation: Updates on CLL/SLL. Chicago, IL
9/13	Lymphoma Research Foundation: Speaker at the 18 <sup>th</sup> Annual North American Educational Forum on Lymphoma: Discussion on Marginal Zone lymphoma: Disease Specific biology and treatment options. (500 attendees), New York, NY
1/14	Town Hall Meeting for patients with Lymphoma and leukemia. Meeting is sponsored by the Leukemia Research Foundation. Chicago, IL
5/14	Lymphoma Research Foundation: Speaker: CLL, New Drugs in 2014. Chicago, IL
10/14	Ask the Doctor: Chronic lymphocytic Leukemia/Small lymphocytic Lymphoma: on behalf of the lymphoma Research foundation. Chicago, IL
1/15	<b>Town Hall Meeting</b> for patients with lymphomas leukemia: Meeting sponsored by the Leukemia Research Foundation, Chicago, IL
3/16	Ask the Doctor: CLL Advances. Program sponsored by the lymphoma research Foundation
Moderator	
3/05	Antibodies for CLL. Meeting sponsored by Genzyme, Las Vegas
4/05	Targeted therapies for CLL. Genzyme, Washington, DC
11/06	Campath in CLL. ION presentation. Chicago, IL
11/07	Advances in CLL therapies. ION presentation. Chicago, IL
6/08	Controversies in front-line CLL therapies: Moderated an advisory board of academic and community oncologists, Scottsdale, AZ
4/11	Utilization of Rituximab in lymphoma: ION-Community based seminar, Washington, DC
4/12	Non-Hodgkin Lymphoma and the shift of care: ION-community practice moderator. Washington, DC

3/13	Novel Hormonal Therapies in CRPC: Moderated an Advisory Board of community and academic oncologists and urologists. Dallas, TX.
4/13	Immunotherapy in Prostate Cancer. Moderating and Advisory Board sponsored by Cardinal Health, Miami, FL.
9/13	Moderator at the Cardinal Health Summit, (lecturing to 100 community oncologists and moderating the entire meeting and advisory boards). "New Horizons in Oncology", San Francisco, CA.
9/13	Moderator for the Steering Committee on developing educational material for GA101 sponsored by Genentech, Inc.
11/13	Moderator at the Cardinal Health Summit, Dallas, TX
5/14	Co-Chair and moderator for an advisory board and speakers' steering committee for Gilead Pharmaceuticals, San Francisco, CA
6/14	Moderator at the Cardinal Health Summit: Innovative therapies in Oncology. Dallas, TX
7/14	Chair and Moderator for the Steering Committee on Obintuzumab monoclonal antibody, Sponsored by Genentech, Inc. Washington, DC
11/14	Moderator and Chair: Cardinal Health Services Summit focused on the "Business in Oncology". Nashville, TN
2/15	Moderator and Chair: Cardinal Health Services Summit: Technology Solutions and HEOR in Oncology. Miami, FL
3/15	Moderator and Chair: Cardinal Health Services Summit: personalized Medicine in Oncology. Miami, FL.
5/15	Moderator and Chair: Seminar on MPN (PV and CML). Sponsored by Axcess Oncology. Los Angeles, CA.
8/15	T-Cell lymphoma Case Insights. Moderating a discussion on managing T-Cell lymphoma in a webinar format.
9/15	Moderator and Chair: Cardinal Heath Specialty Solutions. Regional Summit of 50-70 medical oncologists, focused on informatics. Las Vegas, NV
9/15	Moderator: Maintenance therapy after transplantation for Hodgkin Lymphoma.  Sponsored by Seattle Genetics. Chicago, IL
11/15	Moderator and chair: Cardinal Health Specialty Solutions. Regional Summit focusing on: Clinical Research: Engaging community oncologists in clinical trials. Atlanta, GA.
3/16	Moderator and Chair of the Cardinal Health Regional Summit, Topic: Specialty Pharmacy trends in Oncology, Orlando, FL
4/16	Moderator: B-Cell Malignancies and CLL. Newer therapies. Seminar organized by Axcess oncology.

# Invited Lectures from Industry

7/06	CLL and its therapies: Advanced training class to Berlex, Seattle, WA
10/06	CLL and new treatments: Advanced training class to Berlex, Seattle, WA
11/07	CLL: Advanced training to marketing/sales teams of Bayer, New Jersey, and NJ
2/09	Lymphoma: An evolving world. To Genentech marketing and sales staff, South SF
6/10	Lymphoma and CLL: An evolving world: To Genentech staff, South SF, CA
10/10	Lymphoma: An evolving world: Presentation to sales force at Genentech, South SF, CA
6/12	Post-ASCO 2012 updates: Presentation to Janssen Global Medical affairs and Marketing teams, Chicago, IL
6/12	Introduction to Prostate Cancer and New Drugs. Presentation to the marketing, sales, and medical affairs teams at Medivation, Inc.
4/13	Chemotherapy overview for castration-resistant prostate cancer. Presentation to the entire sales force of Algeta Pharmaceuticals. Miami, FL

7/13	Academic Advisory Board for B-Cell Malignancies: Sponsored by Genentech, Inc. New York, NY
12/13	Gazyva in CLL: Review of the approved indication: Presentation via live webcast and moderation of a live question/answer session of CLL thought leaders: Sponsored by Genentech, Inc. Dallas, TX.
4/14	Academic Advisory Board for CLL and Lymphoma. Sponsored by Genentech, Inc. Chicago, IL
9/14	International Advisory Board on Androgen receptors/Enzalutamide. Sponsored by Astellas, Inc. Dubai, UAE
4/15	Academic Advisory Board on Mantle Cell Lymphoma. Sponsored by Celgene. Chicago, IL.
7/15	Academic Advisory Board on Non-Hodgkin Lymphoma, Sponsored by Genentech, Inc. New York, NY.
10/15	CLL: Introduction to Leadership staff at Abbvie, Inc. Chicago, IL.

# Lectures to Community Oncology

10/06	MRD in CLL: A realistic goal? Los Angeles, CA
10/10	Rituximab application in the maintenance setting. Dallas, TX
11/10	Sipuleucel-T in castration-resistant prostate cancer, Oak Brook, IL
11/10	New Immunotherapy for prostate cancer. Indianapolis, IN
9/11	Ofatumumab in CLL. Peoria, IL
6/12	Post-ASCO-2012 prostate cancer update: Discussion at P4 Cardinal Health Oncology Summit, San Francisco, CA
9/12	Rituximab in low-grade lymphoma: presentation at ION meeting, Chicago, IL
4/13	Rituximab in hematologic malignancies, Fort Wayne, IN
5/13	Rituximab in CLL and its application, Champaign, IL
5/13	Rituximab in Low-grade non-Hodgkin Lymphoma, Decatur, IL
5/13	Treating CLL. Lecture to oncology fellows in the Chicago area
10/13	Lymphomas: Central Dupage Hospital, Winfield, IL
11/13	Rituxan in lymphoma, Kankakee, IL.
12/13	Ibrutinib in Mantle Cell lymphoma: Review of disease setting and the approved indication, South Barrington, IL
4/14	Ibrutinib in CLL and Mantle cell Lymphoma. Lecture to Little Company of Mary Physicians, Evergreen park, IL
5/14	Xtandi and its indications in CRPC. Lecture to community oncology in Decatur, IL
8/14	Lymphoma antibodies: Weiss Memorial Hospital, Chicago, IL
11/15	Indolent Lymphoma and CLL. Lecture to Michiana Oncology, South Bend, IN

# INVITED, ELECTED, OR APPOINTED EXTRAMURAL SERVICE

3/09	Chair and organizer, First Annual Trends in Hematology and Oncology for the Health
	Care Provider, Advocate Lutheran General Hospital, Park Ridge, IL
4/09	Invited Faculty, the 6th annual International Chicago Lymphoma Symposium
10/09	Chair and organizer, Seminars in Oncology for the Primary Care provider, Lutheran general Hospital
3/10	Chair and organizer, second annual trends in hematology and oncology for the health care provider, Advocate Lutheran General Hospital, Park Ridge, IL
4/10	Invited Faculty at the 7th International Chicago Lymphoma Symposium, Chicago, IL

3/11	Chair and organizer, Fourth annual trends in Hematology and Oncology for the Health
	Care Provider, Advocate Lutheran General Hospital, Park Ridge, IL
4/11	Co-Chair and invited faculty, the 8th annual international Chicago Lymphoma
	Symposium, Chicago, IL
9/11-	Participated in moderating several sessions of the Chicago Lymphoma Rounds sponsored by the Lymphoma Research Foundation
3/12	Chair and organizer, the 5 <sup>th</sup> annual trends in hematology and oncology for the health care provider, Advocate Lutheran general Hospital, Park Ridge, IL
4/12	Invited faculty, the 9th annual International Chicago Lymphoma Symposium, Chicago, IL
12/12	Abstract Reviewer, Lymphoma category, ASH (American Society of Hematology)
3/13	Chair and Organizer, the 6 <sup>th</sup> annual trends in hematology and oncology for the health care provider, Advocate Lutheran General Hospital, Park Ridge, IL
5/14	Faculty and planning committee member at the 11 <sup>th</sup> Annual International Chicago Lymphoma Symposium, Chicago, IL
5/14	Appointed as a member of the Health Disparities committee for the American Society of Clinical Oncology (ASCO)
7/14	Selected as a member of the Digital Education working Group for the American Society of Hematology (ASH)
4/15	Faculty and abstract reviewer for the 12 <sup>th</sup> Annual International Ultmann Chicago Lymphoma Symposium, Chicago, IL
5/16	Faculty and abstract reviewer for the 13 <sup>th</sup> Annual International Ultmann Chicago Lymphoma Symposium, Chicago, IL.

## JOURNAL REVIEWER

Annals of Internal Medicine
Annals of Oncology
Annals of Hematology
Avicenna Journal of Medicine
American Journal of Hematology
Blood

Bone Marrow Transplantation British Journal of Haematology

Cancer

Clinical Lymphoma, Myeloma, and Leukemia

Clinical Genitourinary Cancer European Journal of Haematology Expert Opinions in Biological Therapy Expert Reviews of Hematology

Haematologica

International Journal for Hematologic Oncology

JAMA-Oncology

Journal of Clinical and Experimental Pathology

Leukemia and Lymphoma Leukemia Research Reports Pharmaceuticals

200 - 22 -

Editorial Board:
Leukemia Research and Treatment
Avicenna Journal of Medicine
JAMA-Oncology

#### PAST CLINICAL RESEARCH PROTOCOLS (Closed)

(IIT=investigator-initiated trial, PI=Principle investigator, Sub-I=sub-investigator)

- IIT: PI: Phase I/II clinical trial of single agent clofarabine in refractory non-Hodgkin lymphoma.
- IIT: PI: Phase II study of oxaliplatin plus docetaxel in front-line therapy for advanced metastatic non-small cell lung cancer.
- IIT: PI: Phase II study investigating the combination of velcade, rituximab, cyclophosphamide, and dexamethasone (VRCD) in low-grade non-Hodgkin lymphoma.
- Sub-I: Phase II study of fludarabine, cyclophosphamide followed by Campath-1H in previously untreated CLL patients. (PI: Steve Coutre, Stanford University)
- IIT: PI: Phase I/II study of rituximab plus campath in refractory and/or relapsed CLL.
- IIT: PI: Phase II trial of Mylotarg as first line therapy in AML patients >65 years of age.
- IIT: PI: Phase II study with single agent erlotinib in chemotherapy-naïve castration-resistant prostate cancer
- IIT: PI: Phase II study with single agent temsirolimus in chemotherapy-naïve castrationresistant prostate cancer
- IIT: PI: Phase II study of single agent lenalidomide in chemotherapy-naïve castration resistant prostate cancer
- IIT: PI: Phase I/II study to evaluate the ability of sorafenib to overcome chemotherapy resistance in patients with castration-resistant prostate cancer
- IIT: PI: Phase I study combining imatinib mesylate and sorafenib in refractory castrationresistant prostate cancer
- IIT: PI: Phase II study to evaluate maintenance GM-CSF in patients with castration-resistant prostate cancer who maximized their response to chemotherapy

#### **TEACHING**

2003 - 2013	Participation in the in-patient Hematology and Oncology service (4 weeks/year).  Advocate Lutheran General Hospital, Park Ridge, IL
2003 - 2013	Malignant hematology and prostate cancer lectures to students and residents (2-4/year).  Advocate Lutheran General Hospital, Park Ridge, IL
2006 - 2009	Development of the in-patient fellowship program curriculum, Advocate Lutheran General Hospital
2008 - 2013	Board Review for Internal Medicine residents (twice/yearly). Advocate Lutheran General Hospital, Park Ridge, IL
2009 - 2012	Program Director, Hematology and Oncology Fellowship Program, Advocate Lutheran General Hospital
4/2011	Participation in Fellowship Workshop and Curriculum Vitae writing for Internal Medicine Residents. Advocate Lutheran General Hospital, Park Ridge, IL
4/2012	Participation in Fellowship Workshop for the Internal Medicine Residency Program.  Advocate Lutheran General Hospital, Park Ridge, IL
2008 - 2013	Supervising the Hematology/Oncology outpatient clinic (1/2 day weekly throughout).  Advocate Lutheran General Hospital, Park Ridge, IL
2009 - 2012	Moderating Hematology and Oncology Fellowship Journal Club (once/month). Advocate Lutheran General Hospital, Park Ridge, IL
2009 - 2012	Organizing and moderating fellows' research talks/seminars (once every 8 weeks).  Advocate Lutheran General Hospital, Park Ridge, IL

2010 - 2013	Moderator, Chest Tumor multidisciplinary conference (once/week). Advocate Lutheran
	General Hospital, Park Ridge, IL
2010 - 2013	In-service lectures for the BMT and oncology nurses at Advocate Lutheran general
	Hospital, Park Ridge, IL (Once or twice/year)
2013 -	Teaching residents on the inpatient service at the University of Chicago (4 weeks/year)
2013 -	Participation in the teaching of Hematology and Oncology fellows at the University of
	Chicago Comprehensive Cancer Center

1957.8	Chicago Comprehensive Cancer Center	
MENTORSHI	P	
2005 - 2008	Brit Hanson	
2006 - 2009	Mentored a resident through her writing of a protocol to review Mediastinal lymphomas outcomes. She completed her Fellowship in Hematology and Oncology at Loyola University of Chicago and is now practicing at North Shore University Health System in Evanston, IL focusing on GU malignancies and immunotherapy  Ewelina Morowa	
2000 - 2009	Mentored as a resident at Lutheran General Hospital. Supervised her research and case reports. She completed her fellowship in Hematology and Oncology at Cornell University and then completed a BMT fellowship at Memorial Sloan Kettering Cancer Center. She is currently a scientist researcher with Novartis pharmaceuticals.	
2007 - 2010	Benjamin Parsons Mentored as a resident at Lutheran General Hospital. He completed 3 research projects under my supervision and won the Research of the Year award for his residency class. Benjamin is completed his Hematology and Oncology Fellowship at Loyola University of Chicago, Maywood, IL. Graduated in 6/2013 and joined a private practice in Indianapolis, IN	
2006 - 2009	Avanthi Ragam  Mentored as a Fellow in Hematology and Oncology at Lutheran General Hospital. She co-authored two review articles and two case reports and is now a practicing Oncologist with Cadence Health System	
2007 - 2010	Abhi Nair  Mentored as a Fellow in Hematology and Oncology at Lutheran General Hospital. She was a first author on an original phase II study and co-authored a case report and an editorial. Subsequently, she completed advanced Fellowship at the NIH and is currently working as an officer for the FDA	
2009 - 2012	Angelica Tolentino  Mentored as a Fellow in Hematology and Oncology at Lutheran General Hospital. She wrote two papers while in training and is now a practicing Oncologist at Palos Heights Hospital.	

2010 - 2013 Kimberly Kruczek

Mentored as a resident where she co-wrote several reviews and abstracts. She is a
Fellow in Hematology/Oncology at Loyola University (2013-2016)

2010 - 2013 Anand Patel
Mentored as a resident and supervised his research project. He is a Hospitalist at
Lutheran General Hospital as of July 2013.

2010 - 2013 Andrew Meyer

Mentored as a resident and supervised his research projects. He is a Fellow in

Hematology/Oncology at Lutheran General Hospital (2013-2016). Dr. Meyer won the
best research poster award in the Advocate Research Forum in 2012.

2010 - 2013	Peter Cygan
	Mentored as a resident at Lutheran General Hospital and supervised his research in
2011 - 2013	prostate cancer. Dr. Cygan is a Hematology Fellow at Hershey, PA (graduating in 2016) Shadi Latta
201.0 2535	Mentored as a Fellow in Hematology and Oncology at Advocate Lutheran General
	Hospital (2011-2014) as he worked on several projects and manuscripts in the field of
2009 - 2013	lymphoma. He is now a practicing oncologist at Palos Hospital.  Neil Dalal
2009 - 2013	Mentored as a resident working on several review articles. Supervised his first year of
	Fellowship training in Hematology/Oncology at Advocate Lutheran General Hospital. He graduated in July 2015 and is in private practice in the Chicago area.
2013-	Natalie Galanina
20.0	Mentored as a fellow working on CLL and lymphoid malignancies. She is expected to graduate in 2016

# SERVICE

9/04 - 6/13	Pharmacy and Therapeutics (P+T) committee at Advocate Lutheran General
0,01 0,10	Hospital
10/04 - 10/06	IRB (Institutional Review Board) member of Rush North Shore Medical Center, Skokie, IL
2005 - 2009	Hematology and Oncology Fellowship Program Start-up Committee. Advocate Lutheran General Hospital, Park Ridge, IL
2006 - 2013	Chair of the Organizing committee of the Annual Hematology/Oncology Symposium at Advocate Lutheran General Hospital, park Ridge, IL
2007 -	Member of CIBMTR working committee on acute leukemias
2009-2011	Member of the <b>QOPI</b> implementation committee at Oncology Specialists, SC, Park Ridge, IL. Participated in the process that eventually led to the QOPI certification in 2011.
7/10 - 12/12	Graduate Medical Education Committee (GMEC) at Advocate Lutheran General Hospital, Park Ridge, IL
2011 - 2013	Clinical Research Steering Committee at Advocate Lutheran general Hospital, Park Ridge, IL
2012 - 2013 2011 - 2013	Cancer Committee Member, Advocate Lutheran General Hospital, Park Ridge, IL Chair of the Council of Advisors Committee for Oncology: A committee of patients,
2011 - 2013	administrators, and health care providers formed to improve oncology service line from a community perspective.
2013 - 2014	Member of the Network Development Committee, the University of Chicago Comprehensive Cancer Center, Chicago, IL
2013 -	Member, Leadership Committee, Section of Hematology and Oncology, The University of Chicago, Chicago, IL
2013 -	Member, Quality Affairs Committee, Section of Hematology and Oncology, The University of Chicago, Chicago, IL
2013 -	Member, Ambulatory Operations Committee, the University of Chicago, Chicago, IL
2013 - 2015	Member at Large, the Board of the Illinois Medical Oncology Society (IMOS)
2013 - 2014	Member, Portfolio Strategy Work Group, the University of Chicago Comprehensive Cancer Center

2013 - 2014	Member, Cancer Operations/Facilities Strategy Work Group, the University of Chicago Comprehensive Cancer Center
2013 - 2015	Leading member and physician champion at the University of Chicago. The Committee that led to gaining QOPI certification. QOPI certification was granted 7/2015 to 7/2018
2014 -	Member, Oncology Drugs Safety Committee, the University of Chicago Medicine
2013-2014	Physician Sponsor/Lead of My-Chart initiative: Responsible for implementing this web-based patients' portal across the University of Chicago and its departments.
2014-	Member of the task force addressing length of stay for oncology inpatients at the University of Chicago Medicine
2014-	Member of the Steering Committee for Cancer Strategy Implementation Group. The University of Chicago Medicine
2014-	Member of the Committee on implementing the Nurse Navigator system at the University of Chicago Medicine; Section of Hematology/Oncology; Outpatient Cancer Center
2014-2015	Key Clinical Faculty (KCF) for the Hematology/Oncology Fellowship Program at the University of Chicago Medicine.
2015-	Member of the CTRC (Clinical Trials Research Committee) at the University of Chicago Medicine
2014-	Member, Quality Committee, The University of Chicago medicine, Chicago, IL
2015-	Member, Ambulatory Quality and Safety Committee, the University of Chicago Medicine, Chicago, IL

# Hospital Appointments (past and present):

7/98 - 7/99	Ingalis Memorial Hospital, Harvey, IL
7/02 -7/04	Little Company of Mary Hospitals, Evergreen Park, IL
7/02 - 2/03	Saint Francis Hospital, Blue Island, IL
7/02 - 2/03	Holy Cross Hospital, Chicago, IL
7/02 - 1/09	Advocate Christ Medical Center, Oak Lawn, IL
6/03 - 1/09	Rush North Shore Medical Center (now Skokie Hospital)
1/09 - 1/12	Glenbrook Hospital, Glenbrook, IL
3/03 -	Advocate Lutheran General Hospital, Park Ridge, IL
7/13 -	The University of Chicago Hospitals, Chicago, IL.

# Leadership Roles:

2005 - 2013	Partner and member of the Board of Directors at Oncology Specialists, S. C., Park Ridge, IL
2006 - 2009	Director of the in-patient service for the Hematology/Oncology Fellowship Program at Advocate Lutheran General Hospital, Park Ridge, IL
2008 - 2013	Director and Chief. Division of Hematology and Medical Oncology, Department of Medicine, Advocate Lutheran General Hospital, Park Ridge, IL
2009 - 2012	Program Director, Hematology and Oncology Fellowship Program, Advocate Lutheran General Hospital, Park Ridge, IL
2012 - 2013	Assistant Program Director, Hematology/Oncology Fellowship Program, Advocate Lutheran General Hospital, Park Ridge, IL
2008 - 2013	Chair, The Oncology Service Line Strategic Committee, Advocate Lutheran General Hospital, Park Ridge, IL
2012 - 2013	Medical Director, Advocate Lutheran General Hospital Cancer Institute, Park Ridge, IL

2013 -Medical Director, Ambulatory outpatient Clinical Cancer Center, Cancer Clinics, and Clinical Operations, The University of Chicago Comprehensive Cancer Center, Chicago, IL 2013 -Member of The Leadership Committee in the Section of Hematology and Oncology at the University of Chicago, Chicago, IL Member of the Board of the Illinois Medical Oncology Society (IMOS) 2013 -2013 -Physician Champion and Project Sponsor: MY-Chart. A project to implement patient portal through the EPIC-EMR throughout the University of Chicago, Department of Medicine Director and Scientific Advisor, the Double Hit Lymphoma Foundation; a foundation 2013 established to raise awareness of this aggressive lymphoma to help design clinical trials for this particular entity, www.tdhlf.org 2014-Physician lead and Champion for the QOPI implementation program at the University of Chicago. Lead the efforts that culminated in attaining the prestigious QOPI certification 2014-Medical Director, international Program-Cancer Service line. The University of Chicago 2015-2017 President-Elect: The Illinois Medical Oncology Society (IMOS). To assume presidency in 2017

## Other:

2004 - 2013	Interviewer of the Internal Medicine Residency program applicants at Advocate Lutheran
2000 2042	General Hospital, Park Ridge, IL
2009 - 2013	Interviewer of the Hematology and Oncology Fellowship Program, Lutheran General Hospital, Park Ridge, IL
2012 - 2013	Chair, Search Committee for the BMT Directorship position at Advocate Lutheran
	General Hospital, Park Ridge, IL. Position filled successfully
2012 - 2013	Search committee for the neuro-oncology director at Advocate Lutheran General Hospital, Park Ridge, IL
2012 - 2013	Organizing committee to start the Center for Thoracic Diseases at Advocate Lutheran
	General Hospital, Park Ridge, IL. The center launched successfully in February 2013
2011 - 2013	Chair of the Council of Advisors, a committee of community and hospital leadership to
	improve cancer service line and patient satisfaction at Lutheran General Hospital
2013 -	Interviewer for the Hematology/Oncology Fellowship Program at the University of
	Chicago, Chicago, IL
2013 -	Interviewer for the Internal Medicine Residency Program at the University of Chicago,
	Chicago, IL
Various	Grant Reviewer for the UK Research fund/CLL

#### BASIC SCIENCE RESEARCH EXPERIENCE

- 1994 1995 Research fellow/associate in the Endocrine Unit at Massachusetts General Hospital and Harvard Medical School, Boston, MA. Worked in molecular endocrinology investigating the functional differences between the human Corticotropin-Releasing Factor receptors. Became familiar with cell culture, Western blots, and PCR technology. Laboratory of: Abdul Abou-Samra, MD, PhD. Laboratory of: Henry Kronenberg, MD, PhD.
- 2000 2002 Northwestern University Medical School and Robert H. Lurie Comprehensive Cancer Center. Investigated nucleoside analogues-induced programmed cell death in several

myeloma cell lines. Became familiar with various apoptosis assays and flow cytometry. Laboratory of: Steven T. Rosen.

# REFERENCES

Available upon request

# Attachment B

# Documents reviewed by Dr. Nabhan

# Published scientific literature:

Lightfoot et al; (2006).

Acquavella et al. (2016)

Andreadis; (2007)

Bolognesi (2009)

Bolognesi et al. (2016)

Brammer et al

Brusick et al. (2016)

Cantor et al (1992)

Chang & Delzell (2016)

Chruscielska et al. (2000)

De Roos et al (2003)

De Roos et al. (2005)

DeFarge et al. (2016)

Eriksson et al (2008)

Fritschi et al. (2005)

George et al; (2013)

Greim et al. (2015)

Hardell (1999)

Hardell (2002)

Jain et al; (2015)

Kato et al. (2004)

Kier & Kirkland (2013)

Kwiatkowska et al. (2014)

Lan et al. (2007)

Lee et al; (1999)

Lioi ei al, (1998)

Lueken et al, (2004)

McDuffie et al. (2001)

Mink et al. (2015)

Nordstrom et al. (1998)

Orsi et al (1999)

Pazy-Mino (2011)

Peluso et al (1998)

Portier et al (2016)

Rubio et al. (2014)

Samsel & Seneff (2015)

Schinasi et al. (2014)

Sivikova (2009)

Wang et al. (2006)

Williams et al. (2016)

Depositions and exhibits thereto:

Donna Farmer, PhD.

David Saltmiras, PhD.

William Heydens, PhD.

MONGLY Production:

MONGLY01314233 et seq.

Other:

IARC Monograph 112

EPA SAP Panel Final Minutes and Report