DF/HCC
DANA-FARBER / HARVARD CANCER CENTER

A. David Mazzone Research Awards Program

Request for No Cost Extension
To Extend the Program End Date
From September 30, 2017 to September 30, 2019

Principal Investigator: Myles Brown, MD
Dana-Farber/Harvard Cancer Center

Co-Principal Investigator: Jonathan Simons, MD
Prostate Cancer Foundation

Respectfully Submitted to
U.S. District Court for the District of Massachusetts

Boston, Massachusetts, April 30, 2018

NCI CCC A Comprehensive Cancer Center Designated by the National Cancer Institute

Beth Israel Deaconess Medical Center
Brigham and Women's Hospital
Boston Children's Hospital
Dana-Farber Cancer Institute
Harvard Medical School
Harvard School of Public Health
Massachusetts General Hospital

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I. Proposed No Cost Extension Activities

Request to Extend the Program End Date from September 30, 2017 to September 30, 2019

As reported in the 2017 Sixth Annual Report of Research Progress and Accounting, Report # 013 of the Mazzone Program by Dana-Farber/Harvard Cancer Center (DF/HCC) and the Prostate Cancer Foundation (PCF), all originally approved research activities of the Mazzone Program concluded leaving unspent funds.

As of the period of the 2017 report, all projects submitted accounting and progress reports of successful completion of their activities, including three DF/HCC projects which received extensions through July 2017 and the DFCI CURE Student Training Program. As in prior years, Highlights of the research supported by the Mazzone Program evidenced a significant impact in the field of Prostate Cancer research and a number of promising findings that will transform treatment and will bring researchers and the medical community closer to finding effective cures for Prostate Cancer.

After careful review and accounting reconciliation of all Program awards, we ascertained that the DF/HCC component of the Program ended with a cash received unspent balance of $48,041 as stated in the signed accounting report. This balance does not include the final payment, which is pending disbursement from the Court for approximately $101,000. Therefore, DF/HCC has an unspent balance of approximately $149,000. The unspent balance is the result of various projects which concluded their research and submitted final progress and accounting reports leaving unspent funds balances primarily by two of the DF/HCC projects funded in the period of 2014 to 2017.

Given the availability of funding at DF/HCC, we hereby request from the Mazzone Program sponsor, the Massachusetts District Court an extension of the end date of the program with no additional cost from September 30, 2017 to September 30, 2019. This extension will allow the Program to invest the remaining funds in new worthwhile research projects, which will add value and strengthen the Program's overall impact.

The Mazzone Program hereby requests the Court's approval for the following proposed activities to be supported by remaining funds. At the end of the Extension Period, the Mazzone Program will submit to the Court a final progress and accounting report by September 30, 2019 to document the outcomes of the activities proposed.

Proposed Activities:

$106,000 funding for two Career Development awards through the Dana-Farber/Harvard Cancer Center's Prostate Cancer SPORE Program

We propose offering two grants for Career Development in Prostate Cancer research through the DF/HCC Prostate Cancer SPORE Program's Career Enhancement Program (CEP). The two grants continue in the spirit and guidelines of the original Mazzone Program Career Development awards. The Prostate Cancer SPORE

Program's CEP is a distinguished and highly successful research enterprise led by Principal investigators Drs. Massimo Loda and Steven Balk. Appendix 1 provides a full description of the SPORE CEP and highlights of successful award recipients of the Program.

Using established and transparent methodology for evaluating applicants for the CEP, Drs. Loda and Balk will nominate two highly promising and deserving candidates to apply for these awards. Each award will run for one year for the period of July 1, 2018 to June 30, 2019 and each project will receive funding for $53,000 for direct costs only.

Each candidate will submit a proposal to the SPORE program using the original Mazzone Program Career Development application template and instructions –see Appendix 2 for the sample of Mazzone Career Development proposal submission instructions and template. They will benefit the CEP resources and guidance and they will be required to submit a progress and accounting report at the end of the project year. Drs. Loda and Balk will review the proposals submitted by the candidates using the criteria of the Mazzone Program's Career Development Awards and the CEP guidelines and requirements. The DF/HCC Mazzone Program Principal Investigator, Dr. Myles Brown will provide final review and approval for funding.

$20,000 funding for Student Training Awards
Given the success and significant contribution by the Mazzone Program funding to the field of cancer research opportunities for minorities underrepresented in the sciences. We request funding to be administered through the DF/HCC Continuing Umbrella of Research Experiences (CURE) program. Funding will support tree stipends of $5000 for students participating in an 8-12-week summer research experience. $3000 to plan and support professional development activities including college readiness and student travel to attend and present at conferences. $2000 to supplement the cost of offering a networking event with other summer research programs related to career opportunities beyond academia. This proposal is detailed in Appendix 3

$23,041 funding for a Mazzone Program Retreat and Program Closing Celebration in May of 2019
We propose using the remainder of available funds to support the cost of a retreat and closing celebration for the Mazzone Program. This event will provide an opportunity for Program alumni to come together and share updates and accomplishments resulting from their research supported by the Mazzone Program. This will also be an opportunity to celebrate the tremendous accomplishments, success and advances in Prostate Cancer research supported by the Program. The event will take place in Boston, Massachusetts in a date to be determined in coordination with relevant Program stakeholders.

Summary of Proposed Use of Funding

Unspent Funding (cash balance) as of Report Period Ending 12/31/17:	48,041
Estimated Funding Allocation Pending Disbursement by the Court:	101,000
Available Funding for Additional Program Activities:	**149,041**
Proposed Activities During No Cost Extension Period	
Two awards for DF/HCC Prostate Cancer SPORE Program's Career Enhancement Program (CEP)	
Grant Period: July 1, 2018 to June 30, 2019, two awards $53,000 each	106,000
Dana-Farber/Harvard Cancer CURE Program for Cancer Education (proposal enclosed)	20,000
Mazzone Program Retreat and Closing Celebration, May 2019	23,041
Total Cost of Estimated Activities During No Cost Extension Period	**149,041**

II. Background of the Mazzone Program

The Program is named in memory of the Honorable Judge A. David Mazzone, who provided an indelible contribution to the United States legal system. For nineteen years, Judge Mazzone presided over the federal legal case to clean up the Boston Harbor, a legacy that lives on for generations to enjoy. He demonstrated a life-long commitment to environmental causes and contributed to the organization of local efforts to fundraise for cancer research. Judge Mazzone himself succumbed to Prostate Cancer at a premature age.

The funding agency for the Program is a grant from the U.S. District Court for the District of Massachusetts derived from a pool of unclaimed funds from the 2004 class action suit settlement by TAP Pharmaceuticals. The class action suit was related to marketing and sales practices for the prostate cancer drug Lupron. The Program is administered jointly through Dana-Farber/Harvard Cancer Center (DF/HCC) and the Prostate Cancer Foundation (PCF).

Program Goals: The overarching goal of the program is to leverage the existing institutional infrastructure, funding mechanisms and relationships of DF/HCC and PCF to distribute locally and nationally settlement funds annually on a competitive basis, to support large-scale research collaborations in prostate cancer research; such as cutting-edge pilot projects, development of promising junior investigators, and training talented students.

Specific Program goals:

- To direct leftover Settlement Pool funds from Lupron litigation to research initiatives of merit in prostate cancer and other Lupron-treatable diseases.
- To distribute Settlement Pool funds to researchers in prostate cancer and other Lupron-treatable diseases at the national and local level, and to spur collaborative research between prostate cancer and Lupron-treatable diseases.
- To distribute Settlement Pool funds through existing organizational channels that have an established record of successful grant distributions (i.e., those that have advanced the state of knowledge in the grants' stated areas of research).
- To increase the power and breadth of research in prostate cancer and other Lupron-related diseases, by (i) the strategic administration of new and existing funding mechanisms; (ii) expanding current avenues of investigation; (iii) recruiting new talent into the field; and (iv) ensuring that research is relevant to the primary goals of advancing diagnostic, treatment and quality of life options for patients with prostate cancer and other Lupron-treatable diseases.

Program Mechanism: Grant applications were solicited annually by DF/HCC and PCF throughout the duration of the program. DF/HCC solicits several categories of grant applications from the faculty of Harvard University and its affiliated hospitals encouraging extramural collaborations. PCF solicited grant applications from interested applicants on a national and international level.

Governance: DF/HCC and PCF convened a high-level scientific advisory board (the "Oversight SAB") to participate in the application review process, and to ensure that Settlement Funds are distributed fairly, and in accordance with Requests for Proposals guidelines and any other principles that are associated with such funds.

SAB Members:

- Donald Tindall, PhD, Director and Vice Chair of Urologic Research, Mayo Clinic College of Medicine.
- Howard Soule, PhD, Executive Vice-President and Chief Science Officer at PCF.
- Jonathan Simons, MD, Co-Principal Investigator of the Mazzone Awards Program, President and Chief Executive Officer at PCF.
- Ken Pienta, MD, Director of the Prostate SPORE at the University of Michigan.
- Peter Carroll, MD, Chief of Urology, Director of the Prostate SPORE at University of California, San Francisco.
- Peter Nelson, MD, Director of the Prostate SPORE at the University of Washington.
- Peter Scardino, MD, Chairman of Surgery and Chief of Urology, Director of the Prostate SPORE at Memorial Sloan Kettering Cancer Center.
- William Nelson, MD, PhD, Director of the Cancer Center, Director of the Prostate SPORE at Johns Hopkins University.

- Philip Kantoff, MD, Principal Investigator of the Mazzone Awards Program, Director of the Lank Center for Genitourinary Oncology at DFCI through October 2015.
- Myles Brown, MD, Principal Investigator of the Mazzone Awards Program, effective as of October 2015.

Court Appointed Members:

- Jonathan Tilly, PhD, Director, Vincent Center for Reproductive Biology, Massachusetts General Hospital. –through December 2011.
- Gary Wente, JD, Circuit Executive at United States Courts; US District Court for the District of Massachusetts, Patient Advocate for the Mazzone Awards Program. –through July 2014.

The Court appointed board members and, upon request, Judge Richard G. Stearns, will be included in all governance committee and scientific review board correspondence, and will be invited to any face-to-face meetings or conferences that involve award governance and/or grantee presentations.

Award Categories: Through the Mazzone Awards mechanism, DF/HCC offers funding opportunities in *High Impact* research grants, High Impact Clinical Trials, *Lupron-Treatable Diseases and Conditions* research grants, *Community Outreach* grants, and *Student Education* grants, as well as *Career Development* grants, *Project Development* grants and *Disparity Research* grants. PCF will add to the number of *Challenge* grants that it awards on an annual basis.

The following table provides a description of each category of award that will be made possible through the Program.

Grant Awards Mechanisms (Revised list approved by the Court in 2012)

Award Category	Amount	Duration	Number of Awards
Career Development	100,000	2 years	6
Community Outreach	100,000	2 years	4
Disparities Research	100,000	2 years	5
High Impact Award	500,000	2 years	4
Lupron-treatable	100,000	2 years	3
Project Development	100,000	2 years	9
Student Training	20,000	2 years	8
High Impact Trials	500,000	2 years	1
Seed Fund Community Outreach	10,000		1
PCF Challenge Award	1,000,000	2 years	5

Notes of modifications to the original distribution of funding mechanisms above:

- In 2012, the Court authorized the DF/HCC contingent of the Mazzone Program to create a new award category for “High Impact Clinical Trials” by reallocating one of the five grants originally approved for “High Impact Awards”. This new award was advertised in 2012 and 2013 and an award was issued in 2013.
- Per recommendation of the peer review panel and approval by the Court, a $10,000 - one-time seed funding grant was awarded to Dr. Glenn Bubley in 2012.
- In 2013, two out of four $100K Community Outreach grants remained unfunded. $200K was reallocated to fund a partial High Impact Project
- In 2013, the Court authorized the Prostate Cancer Foundation to fund a Mazzone Program at $500,000 (half of the normal funding amount), which allowed the Foundation to advertise and grant a final Mazzone Challenge Award in 2014.
- In 2014, the Court authorized DF/HCC to use previously unallocated funds ($160,000) from the original Lupron grant to support a special RFA on Community Outreach and Disparities Research and additional funding for the Student Training program. Funding in the amount of $140,000 was issued to two grant recipients selected in 2014 for two-year Disparities Research grants. The remainder $20,000 was allocated as additional funding to the DF/HCC CURE Program increasing the total Student Training grant to $180,000.

III. Program Guidelines

At DF/HCC, applications are reviewed by members of the DF/HCC Prostate Cancer Program and SPORE Governance Committee, and by at least two non-DF/HCC members of the Oversight SAB, who will likely serve in this capacity on a rotating basis. The DF/HCC Prostate Cancer Program and SPORE Governance Committee is comprised of approximately ten Harvard faculty members representing Harvard Medical School and its affiliated institutions. The faculty members were chosen based on their accomplishments, broad vision, impartiality, and diverse expertise. They have expertise

and training in one or more of the following disciplines: medical oncology, urologic oncology, radiation oncology, population science, and basic science.

Yearly reports on Settlement Pool Account financial activity will be submitted to the Court designees and to Judge Stearns. The maximum grant period for grant recipients will be two years; however, grant-making will be staggered over five years. A final accounting will thus be achievable within seven years from the start of the distribution of Settlement Pool funds.

Grant Disbursements and Program Accounting: All grant funds will be paid to grantees according to contractual obligations; grantees are required to submit quarterly invoices against actual expenditures. Progress and financial reports will be required from grantees at the end of year one and will include detailed narrative updates and expenditure reports. The issuance of the second year's funding installment will be contingent upon satisfactory progress by grantees. These payments will be made with the approval of the respective board chairs and the Oversight SAB. Final progress and financial expenditure reports will be expected at the end of the award term.

Both DF/HCC and PCF require that no award funds be directed to overhead expenses at grantee institutions. Therefore, the Settlement Pool funds are subject to IDC at only one point in the overall award process, i.e., upon receipt of funds by DF/HCC. Appendix 4 provides the grant Disbursement Structure and Institutional Financial Reports by Dana-Farber/Harvard Cancer Center and the Prostate Cancer Foundation for the Period of This Report

Program Reporting Schedule: The Program's effective start date was October 1, 2010. The Program issued and sustained grants for five years and the reporting period will run from October 1, 2010 through September 30, 2017 (seven years). Appendix 5 provides the full reporting schedule as approved by the Court.

Appendix 1. Career Enhancement Program (CEP) of the DF/HCC Prostate Cancer SPORE: program description, guidelines, and research highlights

DF/HCC Prostate Cancer SPORE Career Enhancement Program (CEP)

Principal Investigators:

Massimo Loda, MD
DANA-FARBER CANCER INSTITUTE
EDUCATIONAL TITLES
Professor, Pathology, Harvard Medical School
Principal Investigator, Pathology,
Dana-Farber Cancer Institute
Senior Pathologist, Pathology, Brigham And Women's Hospital

Dr. Loda received his M.D. summa cum laude at the University of Milan, Italy. He is a physician-scientist, Professor of Pathology at Harvard Medical School, Chair of the Department of Oncologic Pathology at Dana Farber Cancer Institute, Associate Member of the Broad Institute and senior surgical pathologist at the Brigham & Women's Hospital in Boston. Dr. Loda conceived, built and directs a state of the art Molecular Pathology Core Laboratory at the Dana Faber Cancer Institute. Dr. Loda is one of the pioneer molecular pathologists in the world and has discovered, and explored the mechanism of function of several important cancer biomarkers. His laboratory has been focused for several years on metabolic alterations in prostate tumorigenesis, with a specific interest in lipid metabolism and its regulation. Our approach is multidisciplinary, utilizing cell lines, orthotopic tumor xenograft, genetically engineered murine models and human tumors. They have also been at the forefront in the invention and application of novel molecular pathology techniques such as ex vivo organotypic cultures, multiplexed immunohistochemistry and in situ hybridization, advances in image analysis and applying molecular techniques such as metabolic profiling to formalin-fixed, paraffin-embedded tissue.

Steven P. Balk, md, PhD
BETH ISRAEL DEACONESS MEDICAL CENTER

EDUCATIONAL TITLES
Professor, Medicine, Harvard Medical School
Staff Physician, Hematology/Oncology, Beth Israel Deaconess Medical Center

Dr. Steven Balk's lab developed methods to analyze advanced metastatic PCa through the use of bone marrow biopsies and showed that one mechanism for disease progression after androgen deprivation therapy was through mutations in the androgen receptor (AR). These mutations occur specifically in patients treated with an AR antagonist, flutamide, and are the result of strong selective pressure exerted by this drug. In subsequent studies his lab has further established a critical role for AR in PCa that relapses after androgen deprivation therapy, and identified mechanisms that mediate AR reactivation (including enhanced androgen synthesis by tumor cells). These results have led directly to successful clinical trials with translational as well as clinical endpoints. An additional current focus is mechanisms of progression from low grade to high grade prostate cancer, which will have an impact on management of low grade disease. In conjunction with these research efforts, he has directed the establishment of a prostate cancer tissue bank and correlative clinical database.

PROJECT SUMMARY/ABSTRACT:

The investigators assembled in the DF/HCC Prostate Cancer SPORE have a substantial record in mentorship and development of junior faculty working in the prostate cancer field. The goal of the Career Enhancement Program of our SPORE is to build upon this record and continue a formal process for the identification, selection, funding, and mentoring of individuals pursuing careers in the study of the basic, translational, and clinical aspects of prostate cancer that will lead to improved patient care.

PROJECT NARRATIVE (Public Relevance Statement):

The Career Enhancement Program aims to attract and develop the next generation of translational investigators in prostate cancer.

SPECIFIC AIMS:

The Career Enhancement Program (CEP) of the Dana-Farber Harvard Cancer Center Prostate Cancer SPORE has been very successful at developing the next generation of translational researchers in prostate cancer over the last 15 years. It will continue to accomplish this goal by pursuing the following aims:

1. Soliciting applications for CEP awards
2. Selecting Awardees
3. Mentoring the recipients of CEP awards
4. Monitoring the progress of CEP awardees careers
5. Evaluating the success of the CEP on an ongoing basis

RESEARCH STRATEGY:

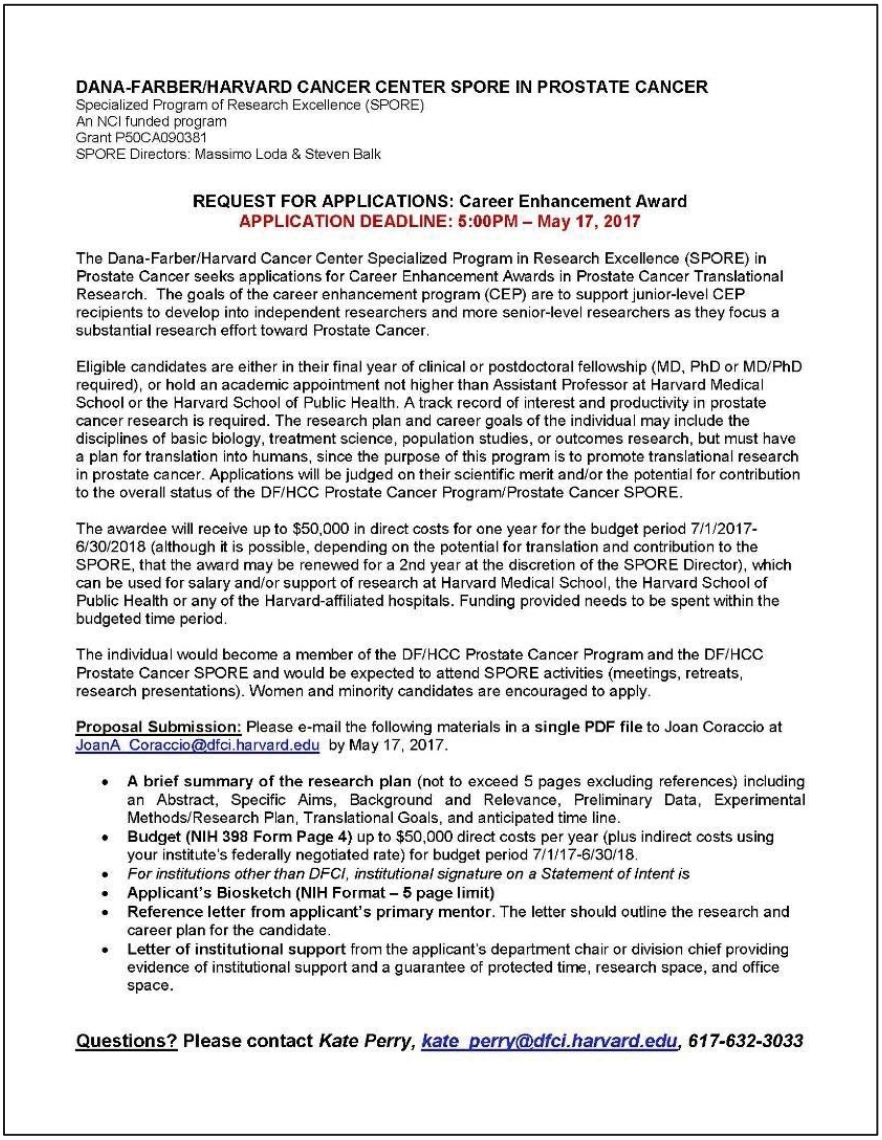
The investigators assembled in the Dana-Farber Harvard Cancer Center (DF/HCC) SPORE in Prostate Cancer have a substantial record in mentorship and development of junior faculty working in the prostate cancer field (detailed below). The goal of the Career Enhancement Program (CEP) of our SPORE is to build upon this record and continue a formal process for the identification, selection, funding and mentoring of individuals pursuing careers in the study of the basic, translational and clinical aspects of prostate cancer.

POLICIES, CRITERIA, AND PROCESSES FOR SELECTING CANDIDATES:

To succeed, the CEP requires: A) Effective candidate selection and evaluation, and B) Mentorship. The steps taken by our SPORE for sustaining research and career progression are summarized below.

The SPORE guidelines indicate that the CEP should “describe the process for selecting candidates.” This Program will rely on the infrastructure created by *Core A-The Administrative Core to:* Solicit applications and identify candidates, Evaluate applications to select CEP recipients, Disburse Funds, Review recipient progress and evaluate the CEP.

Details of these processes for selecting candidates and facilitating their progress toward SPORE goals follow.



DANA-FARBER/HARVARD CANCER CENTER SPORE IN PROSTATE CANCER
Specialized Program of Research Excellence (SPORE)
An NCI funded program
Grant P50CA090381
SPORE Directors: Massimo Loda & Steven Balk

REQUEST FOR APPLICATIONS: Career Enhancement Award
APPLICATION DEADLINE: 5:00PM – May 17, 2017

The Dana-Farber/Harvard Cancer Center Specialized Program in Research Excellence (SPORE) in Prostate Cancer seeks applications for Career Enhancement Awards in Prostate Cancer Translational Research. The goals of the career enhancement program (CEP) are to support junior-level CEP recipients to develop into independent researchers and more senior-level researchers as they focus a substantial research effort toward Prostate Cancer.

Eligible candidates are either in their final year of clinical or postdoctoral fellowship (MD, PhD or MD/PhD required), or hold an academic appointment not higher than Assistant Professor at Harvard Medical School or the Harvard School of Public Health. A track record of interest and productivity in prostate cancer research is required. The research plan and career goals of the individual may include the disciplines of basic biology, treatment science, population studies, or outcomes research, but must have a plan for translation into humans, since the purpose of this program is to promote translational research in prostate cancer. Applications will be judged on their scientific merit and/or the potential for contribution to the overall status of the DF/HCC Prostate Cancer Program/Prostate Cancer SPORE.

The awardee will receive up to $50,000 in direct costs for one year for the budget period 7/1/2017-6/30/2018 (although it is possible, depending on the potential for translation and contribution to the SPORE, that the award may be renewed for a 2nd year at the discretion of the SPORE Director), which can be used for salary and/or support of research at Harvard Medical School, the Harvard School of Public Health or any of the Harvard-affiliated hospitals. Funding provided needs to be spent within the budgeted time period.

The individual would become a member of the DF/HCC Prostate Cancer Program and the DF/HCC Prostate Cancer SPORE and would be expected to attend SPORE activities (meetings, retreats, research presentations). Women and minority candidates are encouraged to apply.

Proposal Submission: Please e-mail the following materials **in a single PDF file** to Joan Coraccio at JoanA_Coraccio@dfci.harvard.edu by May 17, 2017.

- **A brief summary of the research plan** (not to exceed 5 pages excluding references) including an Abstract, Specific Aims, Background and Relevance, Preliminary Data, Experimental Methods/Research Plan, Translational Goals, and anticipated time line.
- **Budget (NIH 398 Form Page 4)** up to $50,000 direct costs per year (plus indirect costs using your institute's federally negotiated rate) for budget period 7/1/17-6/30/18.
- *For institutions other than DFCI, institutional signature on a Statement of Intent is*
- **Applicant's Biosketch (NIH Format – 5 page limit)**
- **Reference letter from applicant's primary mentor.** The letter should outline the research and career plan for the candidate.
- **Letter of institutional support** from the applicant's department chair or division chief providing evidence of institutional support and a guarantee of protected time, research space, and office space.

Questions? Please contact *Kate Perry, kate_perry@dfci.harvard.edu, 617-632-3033*

Solicitation of CEP Award Applications

We have used two principal mechanisms for the solicitation of CEP award candidates. One is a Harvard Medical School-wide Request for Applications (RFA). The other mechanism for solicitation is less formal. Part of the responsibility of the SPORE Directors and the senior leadership of the SPORE (Co-PIs and Governance Committee) is to seek out talented investigators at the different performance sites and solicit their participation in the SPORE.

Recruitment of qualified women, individuals from underrepresented racial and ethnic groups, and individuals with disabilities

We have strived to recruit women into the field and have been fortunate to have a strong candidate pool, with about half of the awards going to women. It is also a high a priority of the CEP and of the Governance Committee to recruit qualified minority investigators to our program. Our efforts along these lines include: 1) regular inclusion of the topic on the agenda of the Governance Committee, 2) working with DF/HCC and its minority recruitment program, and 3) working with the Dean's office at HMS and its office for Faculty Diversity and Development.

Instrument for Campus-Wide Solicitation. **Figure 1** is an example of the RFAs used through the DF/HCC Intranet and by mail to the Department Heads at HMS to solicit CEP award candidates.

The applications consist of the following components:

1) A brief summary of the research plan (not to exceed 5 pages excluding references) including an Abstract, Specific Aims, Background and Relevance, Preliminary Data, Experimental Methods/Research Plan, Translational Goals, and anticipated time line.
2) Budget (NIH 398 Form Page 4)
3) For institution's other than DFCI, institutional signature on a Statement of Intent is
4) Applicant's Biosketch (NIH Format – 5-page limit)

5) Reference letter from applicant's primary mentor. The letter should outline the research and career plan for the candidate.
6) Letter of institutional support from the applicant's department chair or division chief providing evidence of institutional support and a guarantee of protected time, research space, and office space.

Table 1. Governance Committee/ CDP Review Committee
Massimo F. Loda,M.D.
Steve Balk,M.D., Ph.D.
William C. Hahn,M.D.,Ph.D.
Adam S. Feldman,M.D., M.P.H.
Anthony D'Amico,M.D, Ph.D.
Glenn Bubley,M.D.
Christopher J. Sweeney,M.B.B.S. (New)
Huihui Ye, M.D. (New)
Lorelei Ann Mucci,Sc.D.,M.P.H. (New)
Adam Kibel,M.D.
Myles Brown,M.D.
Toni Choueiri,M.D. (New)
Mark Pomerantz, M.D. (New)

Selection of Candidates:
The Governance Committee of the SPORE (Table 1), with advice from additional internal reviewers in cases where additional expertise is needed, chooses the CEA recipients. Over the past funding cycle, Drs. Feldman and D'Amico chaired the CEP with SPORE Directors, Drs. Loda and Balk. We now propose that Dr. Feldman be the sole Director of the CEP. Dr. D'Amico will now Chair the Developmental Research Projects Program. The criteria for judging the applicants are shown below in the "Criteria for CEA Recipient Selection" section. Each application has at least two assigned reviewers with expertise in the relevant area (if these latter reviewers cannot attend the review meeting, they are asked to provide a brief summary to the Co-Chairs and the SPORE Directors, which in turn is conveyed to the rest of the reviewers). At each review meeting, each application is presented briefly, and then scored. Each evaluation criterion is scored using the standard NIH scoring system (Table 2). Scores are submitted to the SPORE Administrator for tally, and CEP applications are prioritized based on their score. A consensus is quickly reached as to which ones are potentially fundable. Proposals felt to be fundable are then re-discussed and are given final rankings.

The SPORE Directors with the Co-Chairs resolves disagreements among committee members or reviewers on CEA applications deemed of equal quality, in cases where only one can be funded. In the event that a Governance Committee member, an individual in his or her group, or anyone with whom a conflict of interest might be perceived submits a CEA application, the Governance Committee member recuses him/herself from the discussion and voting. It is the responsibility of the SPORE Directors to make fair and equitable decisions while giving a high priority to the quality of the candidate and science, potential for translation, and the impact of the CEP awards on the overall progress of the SPORE.

Table 2. Evaluation of Developmental Projects
1. Scientific quality 1-9
2. Novelty 1-9
3. Investigator and environment 1-9
4. Translational potential 1-9
5. Relevance to prostate cancer 1-9
6. Contribution to SPORE/Prostate Cancer Program 1-9
7. General comments

Criteria for CEP Award Recipient Selection. The application and review process as outlined above is implemented by the SPORE Directors and CEP Director, with the assistance of SPORE Administrative staff to see that the RFA is sent out. The administrative office of DF/HCC, under the direction of the Senior Vice President for Research, routinely facilitates such solicitations on a DF/HCC-wide basis. In addition, SPORE administrative staff has mail and email access to HMS

Department Chairpersons and administrative staff. The DF/HCC Prostate Cancer Program leadership will also actively encourage applications from those individuals working within the Program research labs and clinical research groups (with a special emphasis on women and minorities, and those with disabilities). We have a very talented pool of trainees from which to pick some of our CEP awardees.

A robust response to the University-wide solicitation is anticipated in the future, similar to the robust pool of responders in the previous cycles of our SPORE CEP. As mentioned, the criteria used to select the candidate includes: the track record of the individual and his/her potential to contribute to the field as an independent investigator, the translational potential of the proposed work, its programmatic relevance, the quality and commitment of the mentor, and the overall quality of the science proposed. In some cases the Governance Committee may recommend a co-Mentor to provide additional expertise and guidance with respect to basic science aspects or translational potential of a project. CEA recipients will be expected to participate in the activities of the SPORE, including attending monthly meetings, research retreats and presenting their research accomplishments at appropriate times.

FUNDING:

The funding of the program will come from the SPORE as well as through institutional commitment. The funding schema is shown below. (The distribution of funds is the responsibility of the Administrative Core under the SPORE Directors.)

Table 3: Funding

	Year 1	Year2	Year 3	Year 4	Year 5
SPORE	$100,000	$100,000	$100,000	$100,000	$100,000
Institutional Commitment	$100,000	$100,000	$100,000	$100,000	$100,000
Total	$200,000	$200,000	$200,000	$200,000	$200,000

We will set aside $100,000 Direct Costs per year for the CEP. This will be supplemented with an additional $100,000 per year in the form of institutional support. The award will facilitate the research and development of basic, translational, and clinical investigators within our SPORE. Thus, candidates will be fellows, senior postdoctoral fellows, and junior faculty within the various training programs across the Harvard campus. It is our goal to attract, mentor and assure the success of CEP award recipients. Success herein is defined as the development of physician/scientists, or PhD scientists with a translational focus, into independent prostate cancer investigators

CEP EVALUATION AND REVIEW:

The overall goal of the CEP is to nurture the success of talented new researchers in prostate cancer. Young investigators are expected to become financially independent early in their careers. This has particularly impacted clinical investigators who are increasingly pressured by hospitals to increase their patient care volume as clinical reimbursement has diminished. This SPORE CEP strives to protect young investigators from such forces and to attract minority and female investigators to the field of prostate cancer. Award recipients participate in monthly SPORE meetings and our annual retreat where they present any work accomplished during the preceding year. Further, we encourage the recipient to maintain a long-term relationship with the SPORE and with his or her mentor.

Ongoing Review/Evaluation of the Overall Program. The CEP will be reviewed on an annual basis by the Internal and External Advisory Boards (IAB and EAB). The review will consist of feedback solicited from both awardees and mentors as to problems in the CEA process. In addition, the entire program is on display at each annual SPORE retreat. Here, the IAB and EAB members have a chance not only to meet the CEP awardees, but to also measure the progress of the entire program. Each CEP candidate summarizes his or her work at the retreat meeting. Any problems identified by either committee will be brought to the attention of the SPORE Directors. These will be documented, as will any corrective action that is taken.

Evaulation of Individual CEP Award Recipients. One of the principal functions of the SPORE is oversight and monitoring of the quality of the science and the progress of the projects and program. CEP recipients provide annual progress reports during their funding period. SPORE CEP awards are discussed at the monthly Governance Committee meetings, and their Principal Investigators present the progress of the developmental projects on a rotating basis. In addition, they are presented at the yearly Retreat. The progress that CEP recipients make is judged not solely on the attainment of the objectives outlined in the proposal, but also on the ability of the award recipient to make progress in becoming established as an independent investigator focused on prostate cancer translational research. Thus, in contrast to Developmental Awards (which are more narrowly focused), CEP awardees can revise their scientific aims if their initially proposed work meets insurmountable obstacles, provided that the adjusted aims remain committed to scientifically sound efforts in translational prostate cancer research. As a whole, we feel that the CEP recipients have made excellent progress in the last cycle of our SPORE, and such modifications of CEP projects have not been necessary.

Managing Progress toward Stated Aims. When progress is made, several scenarios that lead to a variety of outcomes are possible. These scenarios include: 1) the need for additional seed money, 2) transition into SPORE Principal Investigator status, 3) requirement for additional independent funding, and 4) completion of stated Aims without requirement of continued investigation of the initial hypothesis. In the first scenario, the SPORE Directors with advisement from the CEP Director and Governance Committee, possesses the option to renew funding through the CEP or possibly DRP mechanism. In any scenario, the CEP recipient will be encouraged to seek funding (e.g. NIH R01 or DOD) to expand or continue the breadth or depth of his/her translational prostate cancer research studies.

MENTORSHIP:

Mentor Responsibility

A key component of the CEP process is provision of appropriate and effective mentoring to facilitate the CEA awardee's ability to make progress in his or her project and career alike. The DF/HCC Prostate Cancer SPORE is dedicated to the mentorship and development of the CEP awardees. The Prostate Cancer Program and SPORE have had a strong track record in mentorship and training and conversion of junior faculty to successful independent researchers. Mentors in this program have attracted and trained numerous junior faculty at several levels who have come through the ranks as residents, post-docs or fellows. As mentioned previously, selection of the appropriate mentor for awardees is a key aspect of the evaluation process, and in almost all cases the candidate will have selected (and generally will already be working with) a highly qualified mentor. However, the Governance Committee may in some cases make further recomemndations with respect to mentors. Particularly, in some cases it is valuable to have a co-mentor when the research interests of the trainee go beyond the expertise of one individual. As previously mentioned, this strategy has worked in the past. It is the mentor's responsibility to guide the awardee in his/her research activities and to encourage and critique manuscripts, etc. The

mentor also facilitates and encourages the acquisition of peer-reviewed funding and ensures the appropriate protection time for research of clinical faculty.

Monitoring Success of Trainee and Mentor/Trainee Relationship

The second important component of the mentorship process is oversight of the mentorship/trainee process and monitoring the ongoing success of the trainee. This responsibility has traditionally been that of the various Cancer Center Program Leaders, Department Leaders and Division Chiefs. While this will still occur, we have further formalized a structure for oversight and monitoring. In so doing, we have ensured that the mentor is fulfilling the mentorship role, providing the trainee with advice both scientifically and from a career advancement perspective, and acting as an advocate for the trainee's potential conversion to faculty. As such, an *ad hoc* mentorship committee composed of two to three SPORE individuals appropriate to the awardee's work is in some cases created. When issues arise, the awardee and/or the mentor can seek guidance or help from the *ad hoc* mentorship group, the Governance Committee, and/or the SPORE Directors. Monthly SPORE
meetings have and will continue to provide more frequent, informal opportunities for the awardee to discuss potential issues. The success of this program will be measured by the progress of awardees to productive, independently funded investigators who become contributing members to the field of prostate cancer research
and to our SPORE, or other institutions.

SUCCESS STORIES:

The CEP is one example of the success of our SPORE. We view it as a continuum of candidate selection, mentorship and Career Enhancement through independent investigator and beyond. Below are examples of success stories of past CEP awardees from the DF/HCC Prostate SPORE.

Zhe Li, MD, PhD, is currently an Assistant Professor of Medicine at Harvard Medical School and Brigham and Women's Hospital, and is in the process of being promoted to Associate Professor. His lab studies stem cells and cancer using mouse models. In particular, the lab is interested in elucidating how genetic, epigenetic, environmental, and stochastic factors contribute to the cancer phenotype, and what are the underlying molecular and cellular mechanisms. Dr. Li's lab studies these by applying concepts and tools from stem cell biology and developmental biology, and by using a combination of mouse genetics, biochemistry, and genomic approaches. Under the support of the SPORE funding, they generated and characterized several novel Tmprss2-ETS knockin mouse models recapitulating TMPRSS2-ERG or TMPRSS2-ETV1 gene fusions that are present in ~50% of human prostate cancer cases. They have continued to use these knockin mouse models to study how TMPRSS2-ETS fusions, including the intrachromosomal region between the TMPRSS2 and ERG loci that is deleted in some TMPRSS2-ERG fusions, contribute to prostate cancer development and what are the additional oncogenic events that cooperate with TMPRSS2-ETS fusions.

Currently, Dr. Li and his lab are studying the role of Wnt signaling-responsive cells in prostate cancer, particularly in castration-resistant prostate cancer; they are also studying potential contribution of aging to the development of prostate cancer with TMPRSS2-ETS gene fusions. The funding from the SPORE program provided a vital financial support during Dr. Li's transition to independence and contributed to funded grants from his group in the last several years, including two grants from the Department of Defense, a DF/HCC sponsored Project Development Award, and an NIH UH2 grant, as well as several publications.

Changmeng Cai, PhD, received the SPORE career enhancement award in 2009 when he was a postdoc in Dr. Steven P. Balk's lab. With the support from this award, he initiated the studies on understanding abiraterone resistance in xenograft models (aim 1) and determining the

mechanisms mediating transcriptional repression function of AR (aim 2). These studies were the foundations of his future research career and he has published a number of papers that were related to the support from this award. Particularly, the study of AR transcriptional repression function lead to a major publication in *Cancer Cell* (2011) and a K99/R00 grant (2012) from the NCI/NIH. With the support from K99/R00 grant, Dr. Cai was able to successfully establish his independent research lab at University of Massachusetts Boston in 2015. Directly related to his CEP award, Dr. Cai received the Pathway to Independence award from the NCI/NIH, as well as multiple publications.

Dr. Cai is currently in a position of Assistant Professor at Center for Personalized Cancer Therapy (CPCT), a joint program of University of Massachusetts Boston and DFCI. His research is focusing on understanding the biology and function of androgens and its receptor in prostate cancer cells and targeting androgen receptor for treatment of castration resistant prostate cancer. He has been in prostate cancer research field for more than 15 years and published numerous papers for basic and translational studies. Currently, research in his lab focuses on three aspects of prostate cancer biology (1. To understand the mechanisms that determine the AR transcriptional repression activity and develop strategies to enhance the efficacy of high androgen treatment for CRPC patients, 2. To study the function and activity of lysine-specific demethylase 1 and its epigenetic regulation on AR activity, 3. To understand the mechanisms that contribute for the resistance to abiraterone and enzalutamide) and all these projects were initially related to the specific aims of the 2009 CEP award. Since Dr. Cai joined the CPCT, he was continuously supported by DF/HCC prostate cancer SPORE through the joint program and even received a Developmental Project Award in 2015. Additionally, he has recently been the recipient of two awards from the U.S. Army: The Prostate Cancer Research Exploration-Hypothesis Development Award, and the Research Idea Development Award.

Svitlana Tyekucheva, PhD, received a CEP award from the Prostate SPORE in 2012 when she was a Research Associate. This award helped generate preliminary data for the NCI funded R21 grant in 2014. Two publications resulting from this work are in preparation, one about batch effect correction and preprocessing of the FFPE transcriptomic data, and the other about differential gene expression and its association with lethality in prostate cancer subtypes defined by ERG fusion, PTEN loss and their combinations. In 2013, Dr. Tyekucheva was promoted to a Research Scientist position.

Dr. Tyekucheva actively collaborates with current SPORE investigators: Dr. Loda, Dr. Mucci and Dr. Penney. She is interested in developing reproducible diagnostic and prognostic signatures in prostate cancer using high-dimensional ‘omic’ data, which includes preprocessing methods for the high-throughput assays, application of machine learning technics and designing discovery and validation studies to ensure best reproducibility of the results. As a part of the Biostatistics Core, Dr. Tyekucheva gained extended expertise in metabolomics data analysis, and was invited as a guest lecturer at the AACR Methods Workshop “Complex measurements of tumor metabolism” in 2016. She also co-authored a chapter entitled “Bioinformatic Analysis of Epidemiological and Pathological Data” in the book “Pathology and Epidemiology of Cancer” edited by Drs. Mucci and Loda et al. **Dr.Tyekucheva is Co-PI of proposed Core B.**

Jennifer R. Rider, ScD, MPH, is currently Assistant Professor in the Department of Epidemiology at the Boston University School of Public Health and Adjunct Assistant Professor in the Department of Epidemiology at the Harvard T.H. Chan School of Public Health. As a cancer epidemiologist focusing almost exclusively on prostate cancer, she uses epidemiologic methods to identify patient and tumor characteristics that could prevent lethal disease, improve risk prediction, or reduce overtreatment. She has utilized data from large Swedish population-based studies and a Swedish randomized trial (SPCG-4), Swedish clinical cohorts, as well as the Harvard-based Physicians’ Health Study and the Health Professionals Follow-up Study. Dr.

Rider's current research involves uncovering contributors to prostate cancer disparities by utilizing the diverse prostate cancer patient population at Boston Medical Center, the largest safety net hospital in New England.

Following the completion of her DF/HCC Prostate SPORE Career Development Award, Dr. Rider was selected for a Prostate Cancer Foundation Young Investigator Award and an Eleanor and Miles Shore 50th Anniversary Fellowship for Scholars in Medicine from Harvard Medical School. In 2016 she was awarded an Early Career Catalyst Award from the Boston University School of Public Health. Dr. Rider currently has 73 published original research articles, 66 in the area of prostate cancer. One of her first-authored papers was selected as the Best Clinical Research Paper of 2012 by *European Urology (Popiolek and Rider et al, Eur Urol 2013)*, and in 2016 her first-authored paper was among *European Urology*'s Top 5 most downloaded papers of the year (Rider et al, Eur Urol 2016). Dr. Rider has also served on multiple grant review panels for the Department of Defense Prostate Cancer Research Program and the National Cancer Institute.

Mark Pomerantz, MD, specializes in genitourinary oncology with a scientific interest is the genetics of disease. A focus of his work has been prostate cancer epigenetics. Much of his effort, including his preliminary experiments, have been supported by the DFCI/HCC Prostate Cancer SPORE. His team has developed the methods for performing chromatin immunoprecipitation followed by high throughput sequencing (ChIP-seq) in primary human prostate tissue. They have, for the first time, annotated androgen receptor (AR) binding genome-wide in a cohort of primary prostate tumor and matched normal prostate tissue. They demonstrated that the pattern of AR binding shifts consistently from normal to tumor tissue across all subjects. The tumor-only and normal-only AR sites are highly informative. The tumor-only sites are co-occupied with two transcription factors, FOXA1 and HOXB13. Dr. Pomerantz and his team further demonstrated that introduction of these transcription factors into a normal prostate cell line model causes a shift in AR binding from a normal to tumor pattern (Pomerantz et al, Nature Genetics, 2015). The findings provide new insight into the factors involved in prostate tumorigenesis and identify particular genetic loci and genes that warrant further investigation. This work is ongoing and has attracted substantial funding, including an NIH/NCI R01 (R01CA193910-01) and a Prostate Cancer Foundation Challenge Award. **Dr. Pomerantz is the clinical co-PI of Project 3 in the current application.**

Akash Patnaik, MD, PhD, is currently an Assistant Professor of Medicine within the Section of Hematology/Oncology, Director of the Laboratory for Developmental Therapeutics and Attending Physician within the Genitourinary Oncology Program at the University of Chicago Comprehensive Cancer Center. Dr. Patnaik and his translational laboratory research team focus on targeting PI3K signaling and DNA repair pathways to convert PTEN-deficient cancers from immunologically "cold" to "hot" tumors. He has recently published a groundbreaking paper in Cancer Discovery that represents a paradigm shift in our understanding of how tyrosine kinase inhibitors such as cabozantinib may activate anti-tumor innate immunity resulting in eradication of refractory murine PTEN/p53 deficient cancers. This discovery opens the door to investigating combination trials of tyrosine kinase inhibitors with adaptive immunotherapy, such as T-cell checkpoint blockade or vaccine-based approaches. In addition to his laboratory focus, Dr. Patnaik is a Principal Investigator on several early-phase prostate cancer clinical trials (investigator-initiated and industry-sponsored), and serves as a national correlative science chair for an Alliance Foundation clinical trial in prostate cancer. In the clinic, he focuses on the treatment of patients with genitourinary cancers, which include prostate, kidney, bladder and testicular cancers.

Following his SPORE Career Development Award, Dr. Patnaik has been a Principal Investigator recipient of numerous grants/awards in recognition for his recent work, which

include the DOD Prostate Cancer Research Program Physician-Researcher Award, Bristol-Myers Squibb/International ImmunoOncology Network Award, Cancer Research Foundation Young Investigator Award, American Cancer Society Research Grant and Phi Beta Psi Research Organization Award. Most notably, Dr. Patnaik and his research team won the prestigious Prostate Cancer Foundation Challenge Award, given to 8 teams internationally, chosen from a global competition of 100 applications from 67 cancer research centers in 14 countries.

TRACK RECORD OF CAREER ENHANCEMENT RECIPIENTS FROM THE CURRENT FUNDING CYCLE AND THEIR ACCOMPLISHMENTS

Awardees from previous funding cycle (2013-2018):

Over the course of the last funding cycle we funded 9/37 (24%) CEP applicants who applied. With a commitment of further institutional resources in the ciurrent application, we anticipate being able to increase the number of awards. The following investigators were recipients of CEP awards in our third cycle of funding (2013-2018) and are listed in Table 4.

Table 4. Career Enhancement Program Projects, 2013-2018			
2013-2014 Awards **RFA not distributed; 2nd year of funding awarded to the 2012 Projects**			
PI(s)	**Institution**	**Project Title**	**Total Cost**
Svitlana Tyekucheva, Ph.D	DFCI	RNA-Seq profiling of formalin fixed paraffin embedded prostate cancer samples	$87,464
2014-2015 Awards **5 Applications Received; 2 NEW Projects Funded**			
PI(s)	**Institution**	**Project Title**	**Total Cost**
Atish Choudhury, M.D., Ph.D.	DFCI	Genomic profiling of circulating tumor cells in a trial of combined crizotinib and enzalutamide	$80,697
Adam G. Sowalsky, Ph.D.	BIDMC	Molecular basis for progression to Gleason 4 Prostate Cancer	$80,696
2015-2016 Awards **9 Applications Received; 2 NEW Projects Funded**			
PI(s)	**Institution**	**Project Title**	**Total Cost**
Laura Cato, Ph.D	DFCI	Cochaperone Control of Androgen Receptor Action: Implications for Prostate Cancer Therapy	$77,400
Lauren Harshman, MD	DFCI	Collection of Specimens and Clinical Data for Patients with Prostate Cancer or at High Risk for Prostate Cancer	$77,400
2016-2017 Awards **6 Applications Received; 2 NEW Projects Funded**			
PI(s)	**Institution**	**Project Title**	**Total Cost**
Sen Chen, Ph.D.	BIDMC	Targeting Apoptopic Pathways in Advanced Prostate Cancer	$83,540
Xueliang (Gary) Gao, Ph.D.	DFCI	Combinational therapy study with PI3K specific inhibition in prostate cancer	$83,541
2017-2018 Awards **17 Applications Received; 3 NEW Projects Funded**			
PI(s)	**Institution**	**Project Title**	**Total Cost**
Sarah Markt	HSPH	Circadian rhythm disruption and advanced prostate cancer	$85,935
Kent Mouw	DFCI	Developing Tools to Study DNA Repair Deficiency in Prostate Cancer	$89,000
Daniel Schmidt	BIDMC	Investigating PKM2/targeted Therapy for the Treatment of Prostate Cancer	$85,935

We list below the specific aims of each project and then in a table list how these projects have enhanced the research environment (grants and further funding obtained). Publications

consequent to their SPORE participation that are relevant to progress in translational cancer research are listed directly after this narrative.

Svitlana Tyekucheva, Ph.D.
"Methods for RNA-Seq profiling of formalin fixed paraffin embedded prostate cancer samples"
Specific Aims:
The goal of this project is to determine feasibility of RNA-Seq approach to the gene expression profiling of the formalin-fixed paraffin embedded (FFPE) prostate tissues and to identify peculiarities/patterns in the data related to the FFPE-specific RNA fragmentation and degradation that require development of novel bioinformatical approaches.

Atish Choudhury, M.D., Ph.D.
Genomic profiling of circulating tumor cells in a trial of combined crizotinib and enzalutamide
Specific Aims:
Aim 1: Whole-exome sequencing of CTCs before treatment and at progression to assess for genetic determinants of response and resistance to crizotinib and enzalutamide
Aim 2: RNASeq of CTCs on treatment with crizotinib and enzalutamide to assess pharmacodynamic response, and at progression to assess resistance pathways
Aim 3: Generation of comparator gene expression profiles from spiked cells for interpretation of resistance pathways

Adam G. Sowalsky, Ph.D.
Molecular basis for progression to Gleason 4 Prostate Cancer
Specific Aims:
Aim 1: Identify mechanisms that drive progression to higher-grade prostate cancers.
Aim 2: Identify the spectrum of genomic lesions predictive of Gp3 cancers coincident with Gp4.

Laura Cato, Ph.D.
Cochaperone Control of Androgen Receptor Action: Implications for Prostate Cancer Therapy
Specific Aims:
The overreaching goal of the project was to characterize the mechanism by which the cochaperone Bag-1L modulates androgen receptor (AR) activity in hormone-dependent and castration-resistant prostate cancer (CRPC), and to generate knowledge on the potential of this protein for the therapeutic intervention in prostate cancer. The three specific aims to address this were:

1. Examination of the relevance of Bag-1L in prostate cancer and in CRPC
2. Characterization of the Bag-1L/AR interactors in prostate cancer and in CRPC
3. Investigation of Bag-1L/AR inhibitors and analysis of their potency in prostate cancer.

Lauren Harshman, M.D.
The impact of SLCO genes and common medications such as statins on abiraterone acetate efficacy in prostate cancer.
Specific Aims:
The primary objective of the study was to assess whether statins impact the efficacy of abiraterone acetate (AA) in patients with advanced castration-resistant prostate cancer (CRPC). Statins may compete with AA for influx by the membrane transporter SLCO2B1, which could negatively impact its efficacy.

Sen Chen Ph.D.
Targeting Apoptosis Pathways in Prostate Cancer: RTK Inhibitors Synergize with Navitoclax Through Downregulation of MCL1
Specific Aims:
Aim 1. Assess the effect of multiple kinase inhibitors on MCL1 expression in LNCaP xenografts
Aim 2. Assess the response to therapy with Navitoclax in combination with kinase inhibitors that reduce MCL1 in LNCaP xenografts

Gao, Xueliang (Gary) Ph.D.
Project Title: Combinational therapy study with PI3K specific inhibition in prostate cancer
Specific Aims:
Aim 1. To evaluate potential combination partners for p110β inhibitors in PCa.
Aim 2. To study p110β inhibition in primary human prostate tumor explants and organoid cultures *in vitro*.

Enhancement of Research Environment:
These SPORE projects enhanced the ability to develop other funded grant applications for members of the study team, including new independent research awards as well as career development awards for research fellows and junior faculty (Table 5). This Table does not include leadership positions in clinical trials. Clinical trials led by Lauren Harshman and by Atish Choudhury, are important elements of the current proposal.

Table 5. Enhancement of Research Environment: Funding following receipt of CEP award by recipient

Svitlana Tyekucheva, Ph.D.: Methods for RNA-Seq profiling of formalin fixed paraffin embedded prostate cancer samples	
Sponsor/Mechanism	**Title of Grant/ Award**
NCI	R21 CA185787 grant application
Atish Choudhury, M.D., Ph.D.: Genomic profiling of circulating tumor cells in a trial of combined crizotinib and enzalutamide	
Sponsor/Mechanism	**Title of Grant/ Award**
Dana-Farber Cancer Institute Wong Family Award	Whole Exome Sequencing from Circulating Free DNA as a Clinically Relevant Biomarker in Metastatic Prostate Cancer
Adam G. Sowalsky, Ph.D.: Molecular basis for progression to Gleason 4 Prostate Cancer	
Sponsor/Mechanism	**Title of Grant/ Award**
Department of Defense	Exploration-Hypothesis Development Award (2015)
Department of Defense	Idea Development Award-New Investigator Option (2015)
Department of Defense	Impact Award-Partnering PI Option (2016)
PCF/Young Investigator Award	N/A
Laura Cato, Ph.D.: Cochaperone Control of Androgen Receptor Action: Implications for Prostate Cancer Therapy	
Sponsor/Mechanism	**Title of Grant/ Award**
Prostate Cancer Foundation	Challenge Award
Claudia Adams Barr Program	New Investigator Fellowship

Publication list by awardee:

Below is a summary of publications directly related to the SPORE Career Enhancement Program Award.

Atish Choudhury, M.D., Ph.D.

Genomic profiling of circulating tumor cells in a trial of combined crizotinib and enzalutamide

Adalsteinsson VA, Ha G, Freeman SS, Choudhury AD, Stover DG, Parsons H, Gydush G, Reed S, Loginov D, Livitz D, Rosebrock D, Leshchiner I, Kim J, Stewart C, Rosenberg M, Francis J, Zhang CZ, Cohen O, Oh C, Ding H, Lloyd M, Mahmud S, Helvie K, Merrill MS, Santiago RA, O'Connor E, Jeong SH, Leeson R, Barry R, Kramkowski J, Zhang Z, Polacek L, Lohr JG, Oliver N, Marini L, Harshman L, Tolaney S, Van Allen E, Winer EP, Lin NU, Nakabayashi M, Taplin ME, Johannessen CM, Garraway L, Golub TR, Boehm JS, Wagle N, Getz G, Love JC, Meyerson M. "Reproducible and scalable approach for whole-exome sequencing of cell-free DNA from patients with metastatic cancer." Manuscript in review.

Adam G. Sowalsky, Ph.D.

Molecular basis for progression to Gleason 4 Prostate Cancer

Sowalsky, A., Kissick, H., Gerrin, S., Schaefer, R., Xia, Z., Russo, J., Arredouani, M., Bubley, G., Sanda, M., Li, W., Ye, H., and Balk, S.: Gleason score 7 prostate cancers emerge through branched evolution of clonal Gleason pattern 3 and 4, Clinical Cancer Research, In press.

*Gerrin, S., *Sowalsky, A., Balk, S., and Ye, H.: Mutation profiling indicates high grade Prostatic intraepithelial neoplasia as distant precursors of adjacent invasive prostatic adenocarcinoma, The Prostate. 2016: 76: 1227-1236.

Laura Cato, Ph.D.

Cochaperone Control of Androgen Receptor Action: Implications for Prostate Cancer Therapy

Cato L, Neeb A, Sharp A, Buzon V, Ficarro S, Yang L, Muhle-Goll C, Kuznik N, Figueiredo I, Riisnaes R, Armant O, Gourain V, Ntim EA, Rodrigues DN, Rescigno P, Adelmant G, Westerling T, Fauser F, Wu J, Shatkina L, Ester C, Luy B, Puchta H, Stahle U, Marto JA, Nienhaus GU, Al-Lazikani B, Salvatella X, de Bono JS, Cato ACB, Brown M (2017) Transactivation by the intrinsically disordered androgen receptor N-terminal domain is enabled by the cochaperone Bag-1L. (*Submitted*)

Cato L, Neeb A, Brown M, Cato ACB (2014) Control of nuclear receptor dynamics and function by genomic action of molecular chaperones. *Nucl Recept Signal* **12**: e005

Jehle K*, Cato L*, Neeb A, Muhle-Goll C, Jung N, Smith EW, Buzon V, Carbó LR, Estébanez- Perpiñá E, Schmitz K, Fruk L, Luy B, Chen Y, Cox MB, Bräse S, Brown M, Cato ACB (2014) Coregulator control of androgen receptor action by a novel nuclear receptor-binding motif. *J Biol Chem* **289**: 8839-8851

*authors contributed equally to this work

Lauren Harshman, M.D.

The impact of statin use on the efficacy of abiraterone acetate in patients with castration-resistant prostate cancer.

Wang X, Harshman LC, Xie W, Nakabayashi M, Qu F, Pomerantz MM, Lee GS, Kantoff PW. Association of SLCO2B1 Genotypes With Time to Progression and Overall Survival in Patients Receiving Androgen-Deprivation Therapy for Prostate Cancer. J Clin Oncol. 2016 Feb 1;34(4):352-9.

Harshman LC, Werner L, Tripathi A, Wang X, Maughan BL, Antonarakis ES, Nakabayashi M, McKay R, Pomerantz M, Mucci LA, Taplin ME, Sweeney CJ, Lee GM, Kantoff PW. The impact of statin use on the efficacy of abiraterone acetate in patients with castration-resistant prostate cancer. Prostate. 2017 May;77(13):1303-1311

Sen Chen, Ph.D
Targeting Apoptosis Pathways in Prostate Cancer: RTK Inhibitors Synergize with Navitoclax Through Downregulation of MCL1
Arai S*, Chen S*, and Balk SP, Kinase Inhibitors Increase MCL1 Degradation Independent of GSK3 and Synergize with Navitoclax to Drive Prostate Cancer Apoptosis, submitted for publication *co-1st authors

Xueliang (Gary) Gao
Combinational therapy study with PI3K specific inhibition in prostate cancer
Xueliang Gao, Shidong Jia, Onur Cizmecioglu, Manav Korpal, Joshua M. Korn, Charles Z. Wang, Fabienne Schmit, Thanh Von, Lan Jiang, Raymond Pagliarini, Yi Yang, Sabina Signoretti, Jean J Zhao, Guo-Cheng Yuan, Massimo Loda, Thomas M. Roberts. Novel combination therapies for invasive castration resistant prostate cancer based on the critical role of PI3K p110β. (submitted)
Jing Zhang, Xueliang Gao, Fabienne Schmit, Guillaume Adelmant, Michael J. Eck, Jarrod A. Marto, Jean J. Zhao, and Thomas M. Roberts CRKL mediates p110β-dependent PI3K signaling in PTEN-deficient cancer cells. *Cell Reports, in press.*

EXAMPLES OF POTENTIAL CANDIDATES FOR NEXT FUNDING CYCLE:
We list as examples of potential candidates (Table 6) for the next funding cycle the candiates who applied most recently who we were not able to fund this year due to an overwhelming amount of applications in response to our CEP RFA.

Table 7. Examples of Candidates for Future CEP Awards: Current Trainees and Their Mentors

Trainee	Mentors	Current Position
Bin Gui, Ph.D.	Li Gia, Ph.D.	Fellow
Davide Brivio, Ph.D.	Piotr Zygmanski, Ph.D./Paul Nguyen, M.D./Daphne Haas-Kogan, M.D.	Fellow
Eugen Dhimolea, Ph.D.	Constantine Mitsiades, M.D., Ph.D.	Instructor
Xueliang (Gary) Gao, Ph.D.	Thomas Roberts, Ph.D.	Fellow
Joshua Russo, M.D., Ph.D.	Steven Balk, M.D., Ph.D.	Fellow
Kai Boa, M.S., Ph.D.	Hak Soo Choi, Ph.D.	Fellow
Naoe Nihira, Ph.D.	Wenyi Wei, Ph.D.	Instructor
Nitin Joshi, Ph.D.	Massimo Loda, M.D.	Fellow
Paloma Cejas, Ph.D.	Myles Brown, M.D.	Instructor
Quoc-Dien Trinh	Donna Berry, Ph.D., R.N., A.O.C.N., F.A.A.N.	Associate Surgeon
Sándor Spisák, Ph.D.	Matthew Freedman, M.D.	Fellow
Shuai Gao, Ph.D.	Changmeng Cai, Ph.D.	Fellow
Srinivas Viswanathan, M.D., Ph.D.	Matthew Meyerson, M.D., Ph.D.	Fellow
Xiaoding Xu, Ph.D.	Omid Farokhzad, M.D., M.B.A.	Fellow

Appendix 2. Sample Mazzone Program Career Development Proposal Submission Instructions and Template

OVERVIEW

The **A. David Mazzone Research Awards Program** funds a series of collaborative and innovative cancer research, career development, community outreach, and training projects to address a range of needs in prostate cancer and Lupron-treatable diseases. **Funding Agency:** The funding agency for the Program is a grant from the U.S. District Court for the District of Massachusetts of a pool of unclaimed funds from the 2004 class action suit settlement by TAP Pharmaceuticals. The class action suit was related to marketing and sales practices for the prostate cancer drug Lupron. The program is administered jointly through DF/HCC and the Prostate Cancer Foundation.

Career Development Awards will support junior investigators transitioning from training to independent investigators. Research may focus on any aspect of prostate cancer prevention (health promotion, modifiable risk factors, new animal models and extrapolation of these models to human cancer, genetic predisposition to prostate cancer, detection of precursor lesions, chemoprevention, trials in human populations, behavioral research and behavioral intervention trials); epidemiology (classic, genetic, molecular); biostatistics; human cancer genetics; human nutrition; health services and health policy research; and medical decision analysis. Research may also focus on survivorship and quality of life as they relate to prostate cancer; basic and applied research in the behavioral sciences that independently or in combination with biomedical approaches reduces prostate cancer risk, incidence, morbidity, and mortality over the lifespan and across the entire process of carcinogenesis from primary behavioral prevention in youth, to screening, treatment, and survivorship.

AWARD INFORMATION

Award is for $53,000 for one year for direct costs only. The projected award period is July 1, 2018 to June 30, 2019. Two awards in total are available in this category.

ELIGIBILITY AND REQUIREMENTS

Two applicants for this award will be recommended by the Principal Investigators of the DF/HCC SPORE in Prostate Cancer Developmental Research Project based on the following criteria:

- **Significance**. The scientific merit/quality of the proposal (coherent presentation, candidate's own work, prostate cancer focus, translational nature)
- **Candidate.** Quality of prior mentored period of cancer research training; demonstrated interest in problems relevant to prostate cancer, and potential ability to successfully manage an independent research project.
- **Mentor(s):** Mentor's statement describing the potential and capability of the candidate to become a successful independent investigator.

- **Research Plan.** Appropriateness of the proposed research project for the candidate's stage of research development; proposed research relevance to stated career objectives.
- **Career Development Plan.** Appropriateness of the career development plan and the likelihood that the award will contribute substantially to the scientific development of the candidate and consistency of the career development plan with the candidates prior research experiences and current research career goals.
- **Environment and Institutional Commitment to the Candidate.** The quality of the research environment (mentor support, resources available) and institutional commitment to fostering the career development of the candidate.

APPLICATION COVER PAGE AND ABSTRACT

Principal Investigator
Name:
Degrees:
Appointment/title:
Institution:
Department:
Address:
Telephone Number:
Email Address:
DF/HCC Member (yes/no):

Collaborators/Mentors:
Name:
Degrees:
Appointment/title:
Institution:
Department:
Address:
Telephone Number:
Email Address:
DF/HCC Member (yes/no):

Add persons as needed

Abstract:
Description of the project in Laymen's Terms ($250 words max)

PROPOSAL SUBMISSION INFORMATION

Required items (8):

1. **Application Cover Page and Abstract (see above)**
2. **Research Proposal**: The proposal should describe the research to which this award would be applied if funded. Maximum of **3 pages** of text including figures. References and budget pages are not included in this page limit. Appendix material will be accepted with the following restrictions: a two-page limit of relevant supporting text or figures, and only manuscripts that have been accepted for publication with the journal acceptance letter.
3. **Applicant's Career goals**
4. **Mentor's letter of support**
5. **Applicant's NIH Biosketch**
6. **Mentor's NIH Biosketch**
7. **Budget**: Budget requests and budget justifications should be submitted as NIH 398 form with major divisions of funds (personnel, travel, supplies, other, etc.; with adequate rationale). Funds may be used for up to $53,000 for one year for salary and fringe for PIs, up to $3,000 per year for their scientific meetings expenses, and materials as needed.
8. **IRB approval documents and Human Subject Training if applicable (**IRB approval will be required prior to funding**)**

Format: Items 2 – 7 (above) must be compiled and submitted as a single PDF file. The 3 page research proposal should include an introduction, specific aims, and research strategy (significance, innovation, and approach). Use standard size paper (*8 ½" x 11"*), Arial or Helvetica font, 11 points or larger with margins ½ inch or larger (top, bottom, left, and right). Figures and legends must be of legible size and legible when printed in black and white.

Submit Proposal via email to j.hincapie@partners.org
Application Deadline: 11:59:59 PM EST, Thursday, May 31, 2018.

PROGRESS REPORTS

Grantees will be required to submit a progress report to the Mazzone Program including detailed narrative, and expenditure reports (a report form and instructions will be provided to the PI before the end of the award period). Funding will be disbursed based on quarterly invoicing and final funding disbursement will be contingent upon satisfactory receipt of progress and accounting.

Mazzone Program Contact:
Juan Carlos Hincapie
Mazzone Program Administrator
Tel: (617) 223-1446
Email: j.hincapie@partners.org

DETAILED BUDGET FOR INITIAL BUDGET PERIOD DIRECT COSTS ONLY	FROM	THROUGH

List PERSONNEL *(Applicant organization only)*
Use Cal, Acad, or Summer to Enter Months Devoted to Project
Enter Dollar Amounts Requested *(omit cents)* for Salary Requested and Fringe Benefits

NAME	ROLE ON PROJECT	Cal. Mnths	Acad. Mnths	Summer Mnths	INST.BASE SALARY	SALARY REQUESTED	FRINGE BENEFITS	TOTAL
	PD/PI							
SUBTOTALS →								

CONSULTANT COSTS	
EQUIPMENT *(Itemize)*	
SUPPLIES *(Itemize by category)*	
TRAVEL	
INPATIENT CARE COSTS	
OUTPATIENT CARE COSTS	
ALTERATIONS AND RENOVATIONS *(Itemize by category)*	
OTHER EXPENSES *(Itemize by category)*	

CONSORTIUM/CONTRACTUAL COSTS	DIRECT COSTS	
SUBTOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD *(Item 7a, Face Page)*		**$**
CONSORTIUM/CONTRACTUAL COSTS	FACILITIES AND ADMINISTRATIVE COSTS	
TOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD		**$**

Appendix 3. Continuing Umbrella of Research Experiences (CURE) Program Proposed Funding Request

July 2018 – June 2019

Program Description:
Established by Dana-Farber/Harvard Cancer Center (DF/HCC) in 2002, the Continuing Umbrella of Research Experiences (CURE) program provides talented young minority high school and undergraduate with the training and skills they need to pursue careers in STEM-related fields. Since CURE's inception, the program has trained 365 promising students from backgrounds that have been traditionally underrepresented across the medical community. Many of these students were the first in their families – and among the first in their communities – to attend college.

Program Goals:
- Identify, coach, and nurture talented and highly motivated underrepresented high school and college students for potential careers in biomedical cancer research and other STEM fields.
- Enhance students' skills in best research practices, analytical thinking, oral and written presentations, and ethics.
- Expose students to real-time laboratory/research and clinic settings while simultaneously giving practical meaning to academic course work through novel professional and personal development.

Proposed Program Expenses:
Total Amount Requested $20,000
Three stipends of $5000 for students participating in an 8-12-week summer research experience. $3000 to plan and support professional development activities including college readiness and student travel to attend and present at conferences. $2000 to supplement the cost of offering a networking event with other summer research programs related to career opportunities beyond academia.

Expense	Cost
Stipends	
Summer salaries of three trainees at $5,000 per student	$15,000
Stipends Subtotal	*$15,000*
Professional Development (PD)	
PD activities including college readiness, travel scholarships for three students to attend national conferences	$3,000
Networking event for current CURE students and other similar research programs program alumni	$2,000
Professional Development Subtotal	*$5,000*
Total	***$20,000***

Appendix 4. Grant Funding Plan and Accounting Report by Dana-Farber Cancer Institute

A. David Mazzone Awards Program

Funding Structure Plan- seven Years (2010 - 2017)

Revised by Juan Carlos Hincapie on November 30, 2016

Court Disbursement	Tranche 1 (2011-2013)	Tranche 2 (2012-2014)	Tranche 3 (2013-2015)	Tranche 4 (2015-2016)	Tranche 5 (2016-2017)	Total
Date Issued	Nov-10	Nov-12	Jan-15	Nov-15	Expected by 12/31/2017	
Expected Disbursement	4,000,000	4,000,000	2,000,000	1,585,000	115,000	11,700,000
IDC	400,000	400,000	200,000	158,500	11,500	1,170,000
PCF	1,800,000	1,800,000	1,200,000	200,000	0	5,000,000
DF/HCC	1,800,000	1,800,000	600,000	1,226,500	103,500	5,530,000

Estimated Awards Funding Distribution by DF/HCC for 2011 - 2017 Based on Original Grant Proposal Approved by the Court

The following table shows the expected funding distribution per the proposal approved by the Court and expected adjustments for distribution changes to award mechanisms.

Award funding will run from August to July and it will be distributed to grant recipients based on a cost reimbursement method.

Program funding received November 2010 will support 75% of award payments for Round 1 from August 2011 to July 2012. Funding received in November 2012 will support final award payments (25%) for round 1 and 75% of Round 2 awards from August 2012 to July 2013. Funding received in November 2014 will support final award payments (25%) for Round 2 and new awards from August 2013 to July 2015 and additional allocation for 2014 - 2016.

Award Category	Number of Awards Approved	Total Funding Approved	Number of Awards funded 18% of total Proposals received for (2011-2013)	Total Funding Round 1 (75% of total award will fall in this period of time)	Number of Awards funded 22% of total Proposals received for (2012-2014)	Total Funding Round 2 (75% of awards plus 25% from Rnd 1)	Number of Awards funded 18% of total Proposals received for (2013-2015)	Total Funding Round 3 (100% of awards plus 25% from Round 2)	Special RFA 2014, 67% of total Proposals received for (2014-2016)	Total Funding Round 4 (100% of 2 final awards)	Grand Total Projected Direct Cost
Career Development	6	600,000	3	225,000	2	225,000	1	150,000			600,000
Community Outreach	4	400,000	0	0	1	75,000	1	125,000			200,000
Disparities Research	5	500,000	2	150,000	2	200,000	1	150,000			500,000
DR Additional Allocation 2014	2	140,000							2	140,000	140,000
High Impact Award	4	2,000,000	1	375,000	2	500,000	3	1,325,000			2,200,000
Lupron-treatable	3	300,000	1	75,000	2	175,000	0	50,000			300,000
Project Development	9	900,000	4	300,000	3	325,000	2	275,000			900,000
Student Training	8	160,000		12,793		17,013		130,194			160,000
ST Additional Allocation 2014	2	20,000								20,000	20,000
New Awards Approved in 2012											
High Impact Trials	*1*	500,000			0	0	1	500,000			500,000
Seed Fund Community Outreach	*1*	10,000			*1*	*10,000*		*0*			*10,000*
Total DF/HCC		**5,530,000**	11	**1,137,793**	**12**	**1,527,013**	**9**	**2,705,194**	**2**	**160,000**	**5,530,000**
									DF/HCC Variance from Expected Total Disbursement: ted Total Disbursement:		0
PCF	5	5,000,000	2	2,000,000	2	2,000,000	1	500,000	1	500,000	**5,000,000**

Total Approved Direct Expense	10,530,000
Indirect Cost Assessment	1,170,000
Total Estimated in Grant Proposal	**11,700,000**
Actual Projected Disbursement	11,700,000

Notes:

In 2012, two one-time seed funding Community Outreach awards for $10,000 each were approved . Only one seed project was funded in 2012

In 2012 one High Impact award was divided evenly between two projects.

In 2013, two out of four $100K Community Outreach grants remained unfunded. $200K was reallocated to fund a partial High Impact Project

In 2013, PCF funded one partial Mazzone Challenge Award. The remainder ($500K) to be awarded through a 2014 RFA

In 2014, DF/HCC funded 2 additional Disparities Research Grants for $140K total, plus $20K additional Funding for Student training , PCF funded one partial Mazzone Challenge Award with the remainder ($500K) from 2013

DANA-FARBER
CANCER INSTITUTE

ANNUAL REPORT OF EXPENDITURES
FOR THE AWARD PERIOD 08/01/16 THROUGH 09/30/17

LUPRON SETTLEMENT POOL (A. DAVID MAZZONE AWARDS PROGRAM)
UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS
ONE COURTHOUSEWAY, SUITE 2300
BOSTON, MA 02210

DFCI **6192900**

AWARD PERIOD: **08/06/10 - 09/30/17**

REPORTING PERIOD: **08/01/16 - 09/30/17**

INVESTIGATOR: **Brown, Myles A.**

		Year 6	Cumulative
TOTAL AWARD		**0.00**	**11,700,000.00**
UNEXPENDED BALANCE FROM PREVIOUS PERIOD		**757,114.20**	**0.00**
NET AWARD		757,114.20	757,143.20
CASH RECEIVED TO DATE		0.00	11,585,000.00
Compounded summary of DFCI grants			
EXPENDITURES			
	SPECIAL FUND PERSONNEL	58,571.22	1,358,957.20
	FRINGE BENEFITS	8,989.29	357,598.58
	SUPPLIES	0.00	173,038.35
	OTHER	515.50	353,315.88
	SERVICE CENTERS/CORE CHARGES	6,255.80	160,465.48
	OTHER RESEARCH SERVICE CHARGES	0.00	561.50
	AFFILIATED INSTITUTIONS	115,434.42	1,772,769.01
	AFFILIATED INSTITUTIONS CARRY-FORWARD	40,890.65	546,268.35
	ANIMAL FACILITY BOARDING	0.00	8,269.08
	DOMESTIC TRAVEL	0.00	14,650.77
	INCENTIVES	0.00	14,190.74
	CONSULTANTS	0.00	10,000.00
	CLOSEOUT/REALLOC	0.00	(11,892.23)
	ANIMAL PRUCHASE	0.00	5,446.96
SUBTOTAL OF DIRECT EXPENSES		**230,656.88**	**4,763,639.67**
Grants to Institutions outside DFCI			
	Prostate Cancer Foundation	0.00	5,000,000.00
	Nancy Keating/HMS	0.00	100,000.00
	Kathryn Wilson/HSPH	0.00	100,000.00
	David Miyamot/MGH	0.00	100,000.00
	Kathryn Penny/BWH	0.00	100,000.00
	Stacey Minor/BWH	0.00	100,000.00
	Pier Paolo Pandi/IFOM/IEC	0.00	103,319.14
SUBTOTAL OF DIRECT EXPENSES		**0.00**	**5,603,319.14**
TOTAL DIRECT EXPENSES		230,656.88	10,366,958.81
TOTAL INDIRECT EXPENSES @ 10%		363,416.13	1,170,000.00
TOTAL EXPENSES		594,073.01	11,536,958.81
CASH BALANCE *at 9/30/17*			48,041.19

Leslie Y. Colon, Manager of Research Accounting

12/18/17
Date

Appendix 5. Original Plan for Program Reporting to the Court

A. David Mazzone Awards Program
Reporting Schedule

Awards Program Timeframes

Overall program start and end date	October 1, 2010 through September 30th, 2017 (seven years)
Overall program reporting period	October 1, 2010 through September 30th, 2017 (seven years)
All program grants issued between	July 1, 2011 and July 1, 2015 (five years)

Reporting Period	Report Number	Report due by	Notes
October 1, 2010- June 30, 2011	One	July 31, 2011	This report will describe programmatic progress
July 1, 2011 - December 31, 2011	Two	March 31, 2012	This report and all subsequent March reports will describe programmatic progress
July 1, 2011 - June 30, 2012 ***annual report***	Three	September 30, 2012	This report and all subsequent September reports will report on annual research progress and accounting for all grants
July 1, 2012 - December 31, 2012	Four	March 30, 2013	Programmatic report
July 1, 2012 - June 30, 2013 ***annual report***	Five	September 30, 2013	Research progress and accounting for all grants
July 1, 2013 - December 31, 2013	Six	March 30, 2014	Programmatic report
July 1, 2013 - June 30, 2014 ***annual report***	Seven	September 30, 2014	Research progress and accounting for all grants
July 1, 2014 - December 31, 2014	Eight	March 30, 2015	Programmatic report
July 1, 2014 - June 30, 2015 ***annual report***	Nine	September 30, 2015	Research progress and accounting for all grants
July 1, 2015** - December 31, 2015	Ten	March 30, 2016	Programmatic report
July 1, 2015** - June 30, 2016 ***annual report***	Eleven	September 30, 2016	Research progress and accounting for all grants
July 1, 2016 - December 31, 2016	Twelve	March 30, 2017	Programmatic report
July 1, 2016 - September 30, 2017 ***final annual report***	Thirteen	December 31, 2017	Final reports on extended grants and final reconciliation reports

** Last scheduled 2 year grants issued by July 31, 2015, for closure by June 30, 2017

Note:
As per later agreement with the Court, Research Progress and Accounting reports are for annual research activities covering the period August 1 to July 31 each year, as opposed to the period July 1 to June 30.