

## **ABSTRACT: 2017 ELAM Institutional Action Project Symposium**

**Project Title:** Development of an Institutional Physician-Scientist Training Program (PSTP)

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**Collaborators:** Sarah Bronson, PhD; Marissa Klein

**Background, Significance of Project:** Physician-scientists play a critical role in developing externally funded basic, translational, and clinical research programs at academic health centers. At Penn State, we recognize there is a significant shortage of physician-scientists. To address this problem, Penn State will "grow our own" physician investigators by instituting a training program for residents and fellows interested in academic research careers. This program will bridge two successful NIH funded programs that support physician investigator development at our institution, the Penn State Medical Scientist Training Program (MSTP) and the Clinical and Translational Sciences Institute (CTSI).

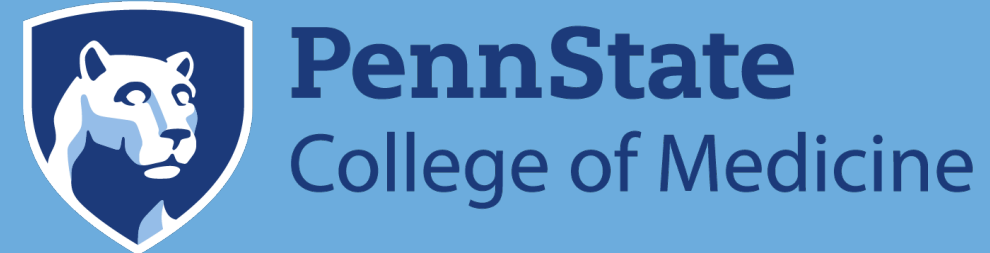
**Purpose/Objectives:** To form a PSTP task force to develop a training program defining a flexible yet aligned process for recruiting and supporting professional development of residents and fellows who desire to focus on research-oriented careers. The program will include infrastructure to promote best practices in research mentoring, a curriculum designed to build research skills, and ongoing opportunities to form strong peer and extended mentoring networks. This customized program will create a sustainable infrastructure to support an integrated clinical and research career pathway involving specialty training across the institution.

**Methods/Approach:** To gauge interest and assess current research opportunities among programs, a survey was sent to residency/fellowship directors. Responses showed that although some amount of research was required for all accredited programs, most research experiences were <6 months in duration. Exceptions included internal medicine, dermatology, and surgery, which have established research tracks of at least 1 year duration, albeit for a small subset of trainees. Residency/fellowship directors were invited to participate in a task force to develop an institutional program that will serve all trainees interested in pursuing research-intensive careers. Current MD/PhD students developed characteristics of an "ideal" PSTP that reflected national standards. The PSTP task force met every two weeks with the charge of developing a curriculum and program guidelines, as well as identifying potential mentors for the trainees.

**Outcomes and Evaluation Strategy:** Process measures will include: (1) submission of a report to the Dean with recommendations for program development and funding; (2) program curriculum to begin in July 2017; (3) list of committed mentors for trainees' research projects; (4) increase in number of residencies with PSTP trainees to include pediatrics, neurology, psychiatry, and pathology; (5) linkage with fellowship programs in medicine and pediatrics (beginning with pulmonary/allergy/critical care and hematology/oncology, with later expansion). Long-term outcome measures will include: (1) increased number of applications and acceptances into PSTP; (2) survey of trainees, mentors, and program directors; (3) number of T, F, and K awards; (4) number and quality of publications; (5) PSTP graduates who accept faculty positions at Penn State or other medical schools.

**Conclusion with Statement of Impact/Potential Impact:** A successful PSTP will increase the number and quality of physician-scientists, provide appropriate professional role models, and create a network of sustainable mentoring for trainees.

# Development of an Institutional Physician-Scientist Training Program (PSTP)



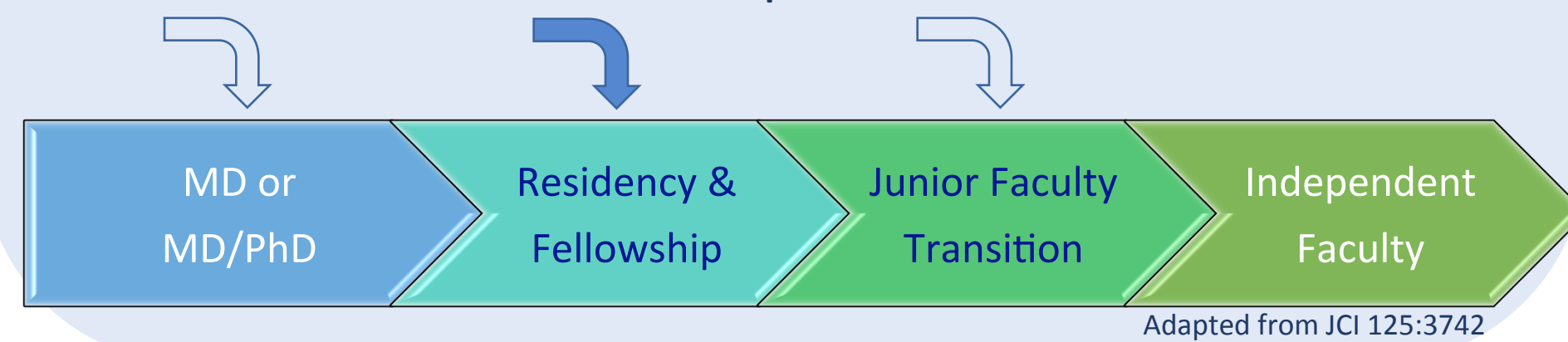
Leslie Parent, MD, Vice Dean for Research and Graduate Studies; Sarah Bronson, PhD, Associate Dean for Interdisciplinary Research; Marissa Klein, Research Team Fellow; and the PSTP Task Force members



Presented at the 2017 ELAM® Leadership Forum

## Background & Significance

- Physician-scientists play a critical role in leading basic, translational, clinical, and health outcomes research programs at academic medical centers (AMCs)
- However, there continues to be a shortage of MD investigators across the nation and at Penn State
- The physician-scientist workforce is aging; need to recruit, develop, and retain junior investigators
- Leaky pipeline with lengthy period prior to faculty position and independent research funding
- Need to establish multiple portals of entry into research-focused career path



## Purpose/Objectives

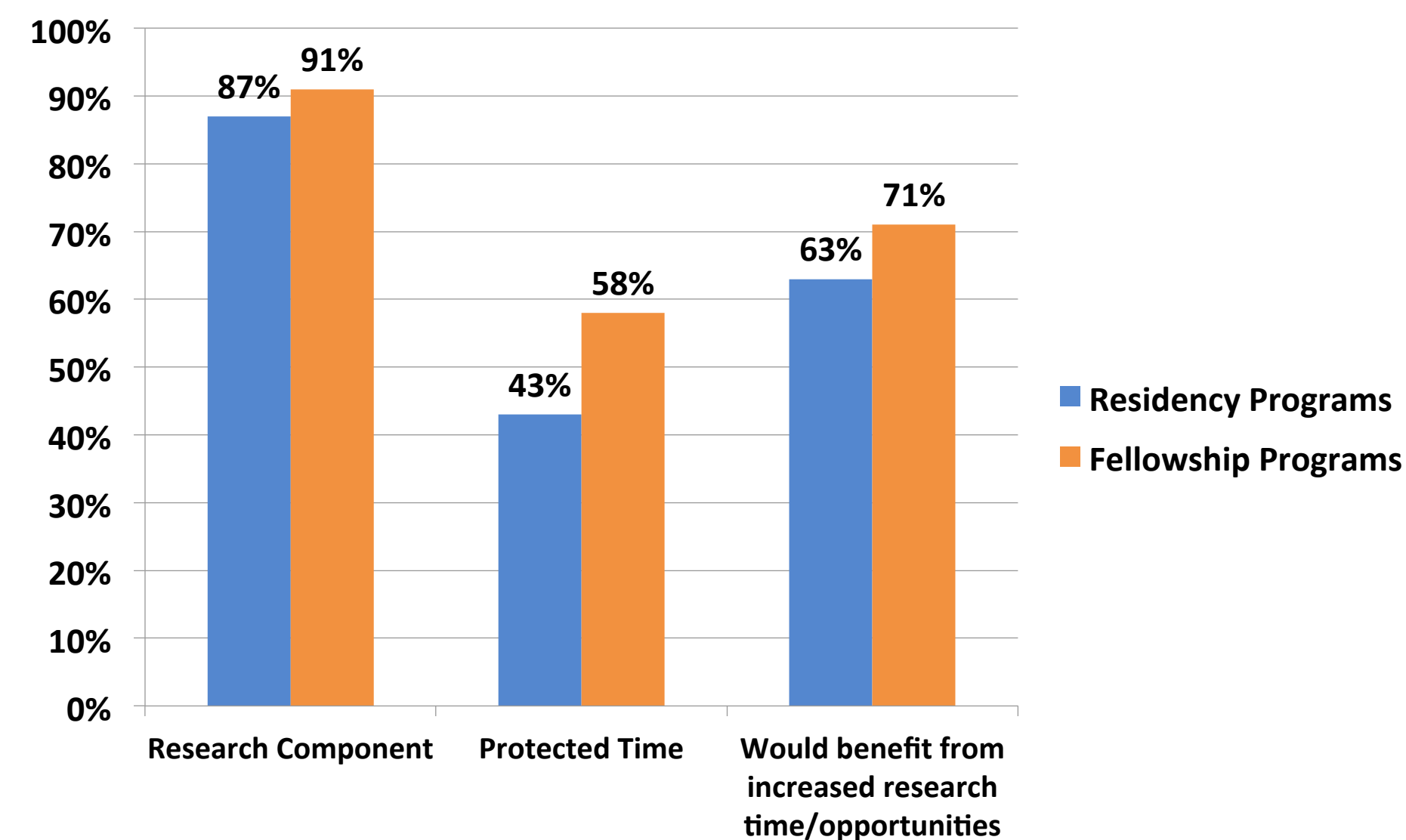
- Develop a training program to “grow our own” physician-scientists to become our faculty of the future
- Fill in the training gap between our MSTP (MD/PhD) program and our junior faculty Clinical and Translational Sciences KL2 program
- Shorten the time to independence for MD investigators
- Create cohorts of physician-scientists at the resident and fellow stage that integrate into our community and strengthen our culture of investigation and discovery

## Methods/Approach

- Conduct a survey to gauge interest in developing a PSTP in each specialty area
- Constitute a PSTP task force of dedicated members to design the program components
- Gather examples of best practices from other AMCs and from our senior MSTP students
- Divide task force into self-identified working groups to focus on each core component
- Convene meetings every 2 weeks with work products and expected timeline identified

## Survey Results

- 50% response rate from 72 program directors
- Desire for protected time for research, central infrastructure to create excellence in mentoring, and financial support for research training.



## PSTP Program Processes

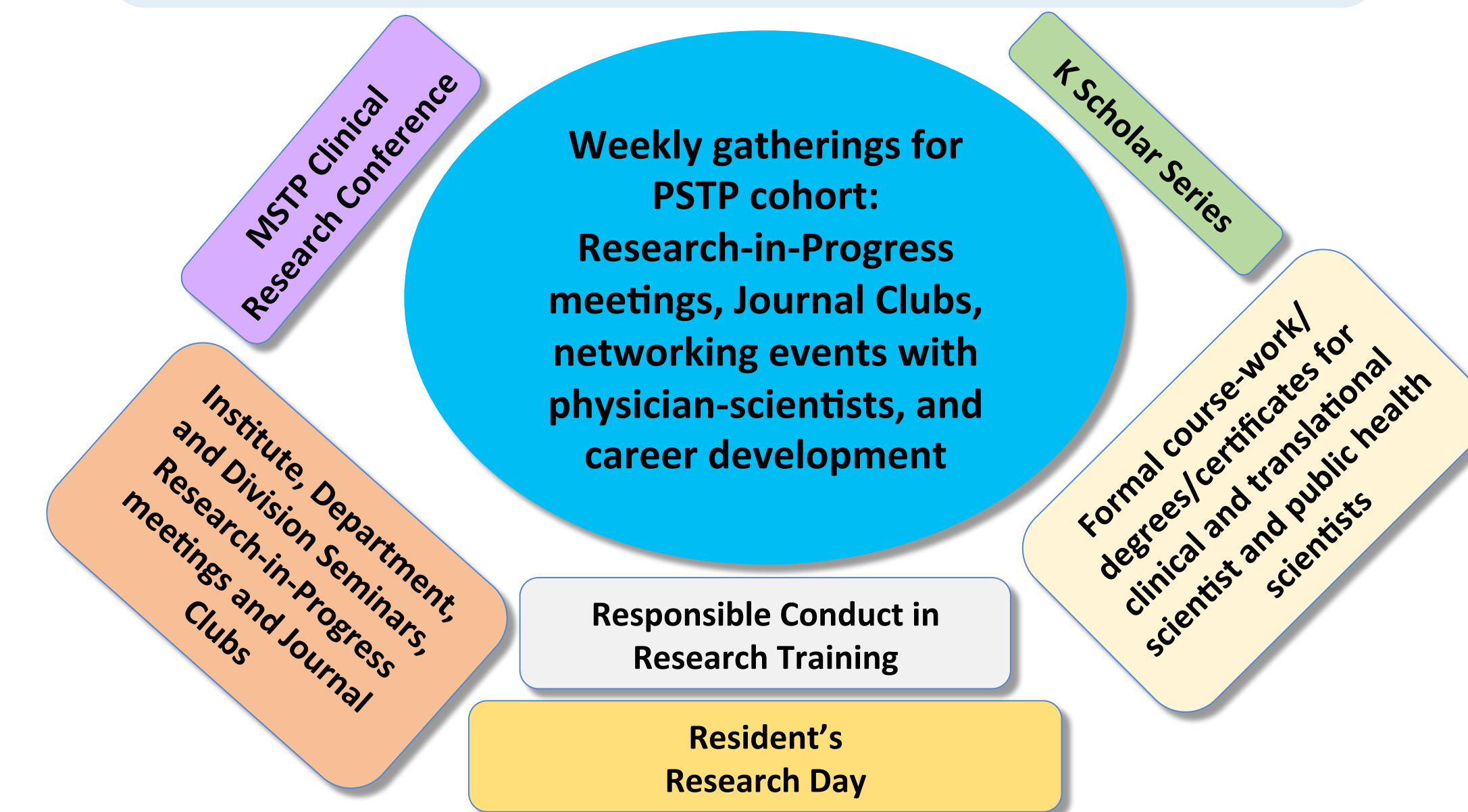
- Determine specialty-specific board requirements for combining research and clinical training
- Establish entry criteria, identify milestones, and define evaluation process
- Define funding model of cost sharing between College and Departments
- Coordinate with Director of Graduate Medical Education regarding approval of extra slots
- Define process for short-tracking within specific subspecialty areas
- Build recruitment strategy to attract top candidates (salary supplements, travel funds, lab supplies, training grants, and guaranteed fellowships)

## PSTP Mentors

- Selection of research mentors with experience in training predoctoral and K awardees
- Mentoring teams of 3-4 member in different disciplines
- Mentor training, expectations, and support

## PSTP Curriculum

Combination of core PSTP components (blue) plus à la carte menu of offerings across the College during 1-2 years of research-intensive phase, continuing through clinical years



## Outcomes/Evaluation

- Track the number of applicants and acceptances into PSTP in each residency and fellowship
- Evaluate success of trainees: publications; presentations; internal and external grants (F32, K, R); success in achieving research-intensive faculty positions at Penn State and other AMCs
- Evaluate success of program: survey of faculty, mentors, program directors, department chairs, and mentees; applications and funding of T32's
- Increase in number and quality of physician-investigators at Penn State

## Next Steps

- Recruit PSTP program director and oversight committee
- Meet with fellowship directors to discuss potential for short-tracking and “automatic” acceptance into fellowships
- PSTP Task Force: E. Bollard, V. Brown, D. Hale, A. Hameed, R. Hohl, X. Huang, R. Levenson, A. Lukacher, L. Scalzi, C. Sciamanna, D. Soybel; N. Swallow, D. Thiboutot, S. Vaida