SUMMARY STATEMENT

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(Privileged Communication) ***Release Date:*** **12/18/2015**

Application Number: **2 T32 HL007457-36A1**

Principal Investigator

OPARIL, SUZANNE MD

Applicant Organization: UNIVERSITY OF ALABAMA AT BIRMINGHAM

Review Group: **ZHL1 CSR-F (F6)**
National Heart, Lung, and Blood Institute Special Emphasis Panel
NHLBI T32 Institutional Training Grants

Meeting Date: **12/10/2015** ***RFA/PA:*** **PA14-015**
Council: **JAN 2016** ***PCC:*** **HHVHTN**
Requested Start: **07/01/2016**

Project Title: **Mechanisms of Hypertension and Cardiovascular Disease**

SRG Action: **Impact Score: 10**
Next Steps: **Visit http://grants.nih.gov/grants/next_steps.htm**
Human Subjects: **10-No human subjects involved**
Animal Subjects: **10-No live vertebrate animals involved for competing appl.**

Project Year	Direct Costs Requested	Estimated Total Cost
36		
37		
38		
39		
40		
TOTAL		

ADMINISTRATIVE BUDGET NOTE: The budget shown is the requested budget and has not been adjusted to reflect any recommendations made by reviewers. If an award is planned, the costs will be calculated by Institute grants management staff based on the recommendations outlined below in the COMMITTEE BUDGET RECOMMENDATIONS section.

2T32HL007457-36A1 OPARIL, SUZANNE

Notice to Applicant: Please note for the January 25, 2016 T32 submission the following 'old' table formats should be used, http://grants.nih.gov/grants/funding/424/datatables_sampleall.pdf. Starting with the May 25 receipt date the 'new' T32 table formats will be required (NOT-OD-16-007). Also the new biosketch format for both senior key personnel and participating program faculty members (mentors) are required for NIH T32 submissions. More information on the NIH biosketch requirements and links to the SciENcv biosketch tool may be found at: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-032.html and http://grants.nih.gov/grants/policy/faq_biosketches.htm.

Year	1	2	3	4	5
Pre / Post	0 / 6	0 / 6	0 / 6	0 / 6	0 / 6

RESUME AND SUMMARY OF DISCUSSION: This amended renewal T32 program in hypertension and cardiovascular disease from Dr. Suzanne Oparil at the University of Alabama at Birmingham was discussed with very high enthusiasm. There was particular praise for the exceptional responsiveness to the prior critiques. Other strengths include the exceptional PD/PI, the outstanding cadre of well-funded mentors, the impressive pool of MD and PHD candidates, excellent outcomes, and the approach of trainees having two mentors thereby giving them exposure to different disciplines. A couple of minor weaknesses were also discussed, specifically the apparent high turnover of faculty and the somewhat high percentage of MDs going into private practice rather than research. However these concerns did not dampen overall enthusiasm for the program and the application was finally rated in the high impact range.

DESCRIPTION (provided by applicant): This Training Program, Mechanisms of Hypertension and Cardiovascular Diseases, Suzanne Oparil, MD, PD/PI, offers multidisciplinary postdoctoral training in fundamental aspects of the pathophysiology of hypertension and related cardiovascular disease (CVD), in innovative approaches to the diagnosis and treatment of these conditions and in translating basic and clinical research findings to the population level. This Training Program advances the spectrum of available training in the following Thematic Focus Areas: Basic Science (fundamental training in mechanisms of inflammatory vascular injury and repair and oxidative stress/free radical injury; T0); Translational Science (translation-to-humans, early clinical trials, testing basic science discoveries for clinical applicability; T1-T2) Clinical Science (research to improve knowledge of new therapies, medical applications and clinical interventions; T2-T3), and Population Science (clinical trials to wide-spread evidence-based practice that improves the overall public health; T3-T4). Faculty Mentors offer training in these rapidly evolving research areas: behavioral, epidemiologic and population/prevention research, state-of-the-art clinical trials, comparative effectiveness research, biostatistics/quantitative sciences, genomics, health disparities research, other-"Omics", and regenerative and reparative medicine. Trainees will have a 2-3 year experience in laboratory, clinical/translational or population- based research under the mentorship of T32 Program Faculty Mentors. Trainees will spend at least 80% of time in investigation, coursework, and in career development activities. The goal of this Program is to prepare trainees for careers in fundamental, clinical, translational and population-based research in hypertension and CVD. The educational experiences available to our trainees will equip them with the

technical skills and theoretical background needed to make them competitive for faculty positions in prestigious academic institutions, in the biotechnology/pharmaceutical industry or in health care delivery research. An important goal of this Training Program is to build productive, efficient, and cutting edge interdisciplinary research and training programs. Thus, this Program and its Faculty Mentors partner with the UAB Center for Clinical and Translational Science (CCTS). The mission of the UAB CCTS is to transform UAB's environment by building interdisciplinary research teams through educational ingenuity, regulatory reorganization, resource coordination, and methodological innovation. The UAB CCTS is one of 62 nationwide CTSA Centers, and the ONLY CTSA Program in Alabama. Relevance: There is a shortage of basic, translational, clinical and population scientists trained to use cutting edge approaches to problems related to hypertension and CVD, a leading cause of death and disability in the US. This is the only Training Program in Alabama that provides highly integrated “bench to bedside” postdoctoral training. The burden of cardiovascular disease (CVD) in the United States (US) is steadily increasing, in part due to the aging of the US population, increased prevalence of conditions such as diabetes, chronic kidney disease and the metabolic syndrome and the emergence of high-risk populations, i.e., racial/ethnic minorities such as African-Americans and Hispanics, and persons infected with HIV/AIDS. These increasing health needs underscore the importance of training basic scientists, clinical scientists and population scientists in an environment conducive to multidisciplinary team research in order to test more effective approaches to the prevention and treatment of hypertension and related vascular disease and other comorbidities. This Training Program addresses these goals, and is the only postdoctoral Training Program in the state of Alabama with a primary focus on hypertension and CVD. (End of Abstract)

CRITIQUE 1

Training Program and Environment:
Training Program Director Principal Investigator (PD/PI):
Preceptors/Mentors:
Trainees:
Training Record:

OVERALL IMPACT:
Strengths include: a very thoughtful and responsive revision to prior reviews, with particular detail now given to the composition and role of the EAC, and the mechanisms for trainee feedback to be collected and incorporated into future programming; the outstanding institutional environment for cardiovascular and research training of all kinds; the breadth of research experiences offered (from basic to translational to clinical to population health); the experience, expertise and funding of the PI and proposed mentors; the extremely competitive MD applicant pool; and the track record of discovery and publication of trainees - particularly for PhD candidates. Weaknesses include: a concern that outstanding science is being modeled and performed in all areas of investigation, but that each trainee is not seeing the full breadth of opportunity before assignment to an effort; a concern that although all proposed mentors are currently funded through external (mostly peer-reviewed) sources, the magnitude of faculty turnover will require deliberate attention to the establishment of collaborations that will benefit both the faculty and the trainees; a concern that the MD track record for the pursuit of careers in science is only about 75%, and the PhD track record for future careers in academic settings in the US even less; and a concern that the enhanced plan for recruitment, retention and graduation of URM candidates is as yet untested.

1. Training Program and Environment:

Strengths

- UAB has a strong history of training excellence in both cardiovascular medicine and research. Other training grants are seen as both a validation of this assertion and a collaborative benefit to this program.

Weaknesses

- None.

2. Training Program Director/Principal Investigator (PD/PI):

Strengths

- The PI is truly an expert, both in the overall area of proposed study and in the administration of training and training grants.

Weaknesses

- None.

3. Preceptors/Mentors:

Strengths

- Many expert and experienced mentors are proposed.

Weaknesses

- The only concern that remains for this reader is that more attention could be given to the large number of faculty turnovers, both at the institutional and training grant program levels. In order for trainees (and mentors) to experience a seamless transition, very deliberate attention will need to be paid to the establishment of collaborative relationships that truly foster team science.

4. Trainees:

Strengths

- The candidate pools are outstanding. In particular, the MD candidate pool represents some of the brightest minds in medicine.
- The current trainee class includes 2 URM trainees out of 6 total trainees. The past history of recruitment and retention of URM candidates and trainees is not so inclusive.

Weaknesses

- The enhanced URM recruitment and retention plan is as yet untested.

5. Training Record:

Strengths

- PhD scientists do very well in the timely achievement of training goals, although many return to their countries of origin or find success in industry.
- MD scientists do well in training, and about a quarter find success in the private practice of cardiology.

Weaknesses

- Mentioned above.

Resubmission:

- Very responsive to prior critiques.

Renewal:
- This is a long standing program.

CRITIQUE 2

Training Program and Environment:
Training Program Director/Principal Investigator (PD/PI):
Preceptors/Mentors:
Trainees:
Training Record:

OVERALL IMPACT:
An outstanding program that continues to actively seek ways to be very current with types of training opportunities. Great efforts were made to be responsive to prior reviewer concerns and applicant has successfully done so.

1. Training Program and Environment:

Strengths
- This training program offers a rich experience for trainees in state-of-the-art research approaches in hypertension. Particular strengths are that the program, despite having been in existence for 35 years, has actively sought to stay ahead of the curve in terms of new developments in this field. The applicant was responsive to concerns about the suggested need for additional didactic courses for MD trainees.
- Mentors and co-mentors for each trainee providing a broader experience across the breadth of different research areas.

Weaknesses
- Minor: a survey respondent stated that *"Low didactic and other requirements allow flexibility of activities and time for research guided by mentors."* thus, though additional didactic course material will be included, at least one alum of the program appreciated a lower didactic content.

2. Training Program Director/Principal Investigator (PD/PI):

Strengths
- A great deal of experience leading this T32 and with an outstanding local and national reputation in the hypertension arena.

Weaknesses
- None.

3. Preceptors/Mentors:

Strengths
- Very interactive faculty as indicated by interactive network diagram. The faculty included as mentors are in general very well-funded. Notably there has been a significant turnover of faculty,

with 9 of the 32 faculty mentors being new. However mentoring of junior faculty by senior faculty mentors is integrated into the program.

Weaknesses

- In a couple of instances, faculty may have funding listed as pending (e.g. Townes), though in this case, the start of the funding period is listed as 9-1-2015.

4. Trainees:

Strengths

- Excellent background and credentials. Trainees have done very well in terms of obtaining their own grant support and publications. The applicant pool is large and applicant information is captured by voluntary faculty submission of applicants to a central web site.

Weaknesses

- Minor: In terms of terminal degree, Table 11 indicates 18 PhDs, 4 MD PhDs and 4 MD postdoctoral fellows have been appointed over the past 5 years of the grant. Thus the predominant trainee has a PhD. Not indicated if there are goals in terms of balance of educational background.

5. Training Record:

Strengths

- It's good to see the survey questions and survey results for 26 alumni of the program, particularly the answer to Q6 as to how much of their time is currently devoted to research. The fact that 22 of 26 said at least 50% of time is devoted to research is a very good indicator of the success of the program.

Weaknesses

- Although the number of MD trainees who enter private practice is not large, it might have been useful if the student survey were to specifically include questions about career decisions, particularly for MD candidates.

CRITIQUE 3

Training Program and Environment:
Training Program Director/Principal Investigator (PD/PI):
Preceptors/Mentors:
Trainees:
Training Record:

OVERALL IMPACT:
This is a revised renewal application for a long-standing program to train MD and PhD postdoctoral fellows in the fundamental aspects of the pathophysiology of hypertension and cardiovascular disease. Strengths of the application include an outstanding environment and leadership team, and a superb cadre of well-funded senior mentors. Changes to the application have been very positive including expansion into population sciences, improvement in the recruitment of URM, and enhanced program evaluation.

1. Training Program and Environment:

Strengths

- Excellent resources, centers, and institutes.
- Broad experiences available to trainees across the translational spectrum.
- Emphasis placed on team science.
- Strong institutional commitment to training programs.

Weaknesses

- None.

2. Training Program Director/Principal Investigator (PD/PI):

Strengths

- Dr. Suzanne Oparil is an outstanding leader and highly regarded internationally recognized investigator who has been leading this training program since 1985.
- Leadership team is extremely accomplished.

Weaknesses

- None.

3. Preceptors/Mentors:

Strengths

- 30 highly qualified senior mentors who are very well funded.
- Significant number of collaborative relationships documented.

Weaknesses

- None.

4. Trainees:

Strengths

- Competitive training program.
- Improved to a now very good level of successful recruitment of URM candidates.
- Good diversity with MD and PhD candidates.

Weaknesses

- None.

5. Training Record:

Strengths

- Most have gone on to assume academic positions following completion of the program.
- Trainees are well published.

Weaknesses

- Significant numbers of MDs go into private practice.
- Few have received grant awards (AHA, NIH K, foundation).

(End of Reviewers' Comments)

THE FOLLOWING RESUME SECTIONS WERE PREPARED BY THE SCIENTIFIC REVIEW OFFICER TO SUMMARIZE THE OUTCOME OF DISCUSSIONS OF THE REVIEW COMMITTEE ON THE FOLLOWING ISSUES:

COMMITTEE BUDGET RECOMMENDATIONS: The budget was recommended as requested.

RECRUITMENT AND RETENTION PLAN TO ENHANCE DIVERSITY: Acceptable.

TRAINING IN THE RESPONSIBLE CONDUCT OF RESEARCH: Acceptable.

NIH has modified its policy regarding the receipt of resubmissions (amended applications). See Guide Notice NOT-OD-14-074 at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-14-074.html. The impact/priority score is calculated after discussion of an application by averaging the overall scores (1-9) given by all voting reviewers on the committee and multiplying by 10. The criterion scores are submitted prior to the meeting by the individual reviewers assigned to an application, and are not discussed specifically at the review meeting or calculated into the overall impact score. Some applications also receive a percentile ranking. For details on the review process, see http://grants.nih.gov/grants/peer_review_process.htm#scoring.

MEETING ROSTER

The roster for this review meeting is displayed as an aggregated roster that includes reviewers from multiple HL Special Emphasis Panels of the Small NHLBI SEPs for Jan 2016 council for the 2016/01 council round. This roster for HL is available at:
http://public.era.nih.gov/pubroster/Reports?DOCTYPE=SEP&DESFORMAT=PDF&AGENDA_SEQ_NUM_P=304079