MARC U-STAR (T34) Program

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National Institute of General Medical Sciences, NIH
MARC U-STAR Program

The Maximizing Access to Research Careers (MARC) Undergraduate Student Training in Academic Research (U-STAR) program is an INSTITUTIONAL Undergraduate research training program that is designed to provide structured training programs to prepare high-achieving, underrepresented students for doctoral programs in biomedical research fields.
Goals

The overarching goal of the NIGMS MARC U-STAR Program is to significantly increase the number of students from underrepresented groups who successfully complete baccalaureate and Ph.D. biomedical degrees.
Objectives

• Increase the number of MARC trainees who enroll in graduate programs leading to doctorate.

• Improve the academic preparedness of undergraduates for graduate school by strengthening science curricula at underrepresented (UR) serving institutions.

• Support activities at UR serving institutions that will promote, motivate, and interest UR students in careers in biomedical research.
MARC U-STAR Program

• The emphasis of the MARC U-STAR Program is on training students to be competitive for admission to advanced (e.g. doctoral) degree programs in biomedical and related sciences. The measurable goals and specific objectives are set by the applicant institution.
MARC U-STAR Awards

• Two-year program for research-oriented honors juniors and seniors

• Provides funds for:
  • Academic enhancements
  • Research training and guided discovery
  • Professional skills development

• Requires one summer research training experience at a Research-Intensive Institution
THE FIRST STEP IN PREPARING FOR A COMPETITIVE MARC U-STAR APPLICATION

READ ALL OF THE INSTRUCTIONS in the FOA CAREFULLY
ELIGIBILITY

MARC Preceptors/Mentors:

• Strong records as researchers in the area of the proposed research training program.
• Record of research training, including successful, former trainees who have established productive careers relevant to the NIH mission.
• Researchers from diverse backgrounds, including racial and ethnic minorities, persons with disabilities, and women are encouraged to participate as mentors.
• May be members of faculty at the applicant institution or external faculty who participate in the proposed program.

MARC Trainees:

• Full-time honors students from underrepresented groups majoring in a STEM field.
• Must be a citizen or a noncitizen national of the United States or have been lawfully admitted for permanent residence at the time of appointment. Additional details on citizenship, training period, and aggregate duration of support are available in the NIH Grants Policy Statement.
• Must matriculate as full-time honors students at the applicant institution in science majors relevant to biomedicine. Full-time effort is 40 hours per week or as specified by the sponsoring institution in accordance with its own policies. 12-month appointments during the final two years of undergraduate training, typically called the junior and senior years. On an annual basis, trainee appointments for less than 12 months require prior written approval by NIGMS.
TRAINING PROGRAM: THE BACKGROUND SECTION

• Describe the need for the proposed academic and research training program as well as the feasibility of success in the context of the institutional setting.

• Emphasize the significant enrollment of underrepresented students as well as the unique environment and strengths of the institution. Institution type according to the Carnegie Basic Classification system and describe their distinctive educational research environment.

• The institutional self-assessment should include:
  - Baseline data regarding the student population
  - Graduation rates (subsequent completion of Ph.D. or combined M.D.-Ph.D. degrees for all students and for underrepresented student)
  - Relevant science programs
  - Use suggested Tables A-C to provide the data to support the institutional self-assessment narrative

• Include the design of the MARC U-STAR program by showing the institutional baseline data as a starting metric, applicants should state the MARC U-STAR Program goals with respect to graduation rates, matriculation into biomedical Ph.D. graduate programs, and earned higher degrees, particularly doctoral degrees.
Program Plan

Include information on:

• Program Administration
• Program Faculty
• Proposed Training
• Research Training
• Academic environment and Skills Development
• Mentoring and Advising
• Program Evaluation
• Trainee Candidates
MARC U-STAR: Allowable costs

• **STIPEND:** $12,336/yr. for students in junior/senior year.

• **TUITION AND FEES:** Equal to 60% of the level requested by the applicant institution, up to $16,000 per year, will be provided.  

• **SUMMER RESEARCH EXPERIENCE:** NIGMS provides funds for the summer research training experience for up to 50% of the appointed number of MARC U-STAR trainees at the time a competing award is made. Applicants should not factor in these summer research experience costs into their budgets since NIGMS will automatically calculate the amount.

• **TRAVEL:** Trainee/faculty travel including attendance at scientific meetings.
MARC U-STAR: Allowable costs (continued)

• **TRAINING RELATED EXPENSES:** A maximum cap of $350,000/year for the TRE portion of a proposed MARC U-STAR budget. Check the FOA for information on what is covered under training related expenses.

• **FACILITIES AND ADMINISTRATION COSTS:** Indirect costs are reimbursed at 8% of modified total direct costs (exclusive of tuition and fees, consortium costs in excess of $25,000, and expenditures for equipment), rather than on the basis of a negotiated rate agreement.
Training Related Expenses (TRE)

New Applications (Type 1)

• Research Intensive Institutions
  - Up to $16,800 per trainee/year

• Non-Research Intensive Institutions
  - Up to $25,200 per trainee/year
Training Related Expenses (TRE)

Competing Renewal Applications (Type 2)

• Research Intensive Institutions
  o Up to $8,400 per trainee/year

• Non-Research Intensive Institutions
  o Up to $12,600 per trainee/year
Responsibilities

• MARC T34 Training Grants are required to submit an NIH Federal Financial Report (FFR) annually
• Delinquent FFRs will delay the funding of the next non-competing grant award
• Carry over of unobligated balances from one budget year to the next is unallowable
• Trainees appointed for a consecutive 24 month period no later than September 30 of each year
X-Train for Student Appointments

• All MARC T34 trainees must have an appointment form submitted through the eRA Commons to X-Train before they may receive their stipend

• If trainees cannot continue in the grant program for the full appointment period an amended appointment must be submitted to X-Train with the correct appointment period

xTrain Web Page - application guide, quick reference sheets, FAQs, training materials:
https://era.nih.gov/services_for_applicants/other/xTrain.cfm
Institutional Environment and Commitment to the Program

- Explain what distinguishes the proposed MARC U-STAR program from the related programs at your institute and how the programs will synergize with one another. Include a justification that the pool of faculty, potential trainees, and resources are robust enough to support the proposed MARC U-STAR Program.

- The application must include a statement from the applicant institution describing the commitment to the planned program. The institution must confirm that sufficient time will be allowed for the PD(s)/PI(s), other faculty, staff and participating students to contribute to the proposed program.

- A signed letter, on institutional letterhead, that describes the applicant institution’s commitment to the planned program is required. The letter must also include a plan for the use of institutional resources to further enhance the training program, which may include support for additional student positions, and/or to enhance the institution’s ability to attract, retain, and develop underrepresented students engaged in biomedical research.
Recruitment Plan to Enhance Diversity

- Describe steps to be taken during the proposed award period regarding the identification and recruitment of research-oriented honors students from UR groups. Consider the success and/or failures of recruitment strategies used in the past.

- Describe the specific efforts to be undertaken by the training program and how these might relate to the recruitment efforts of the institution. Institutional efforts alone will not satisfy the requirement to recruit individuals from underrepresented groups.
Plan for Instruction in the Responsible conduct of Research

• Describe in detail the plans for teaching responsible conduct. This course is mandatory for all trainees.

• Address the subject matter of the instruction, the format of the instruction, the degree of faculty participation, requirements for trainee attendance, and the frequency of instruction.

• Provide a rationale for the proposed plan.

• Applications without plan for the instruction in the responsible conduct will be considered incomplete.

• During peer review, plans will be judged acceptable or unacceptable.

• Irrespective of the priority score, applications with unacceptable plans will not be funded until a revised, acceptable plan is provided.
### Data Tables Summary

<table>
<thead>
<tr>
<th>Table</th>
<th>Title of Table</th>
<th>New Applications</th>
<th>Renewals</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Current Institutional Setting</td>
<td>Yes</td>
<td>Yes</td>
<td>Suggested format, include data in Program Plan</td>
</tr>
<tr>
<td>B</td>
<td>Institutional Biomedical Ph.D. Completion Data</td>
<td>Yes</td>
<td>Yes</td>
<td>Suggested format, include data in Program Plan</td>
</tr>
<tr>
<td>C</td>
<td>Current Science Diversity-Focused Student Programs</td>
<td>Yes</td>
<td>Yes</td>
<td>Suggested format, include data in Program Plan</td>
</tr>
<tr>
<td>D1-D3</td>
<td>Past MARC Trainee Record (D1: 5 years, D2: 10 years, and D3: 15 years)</td>
<td>N/A*</td>
<td>Yes</td>
<td>Suggested format, include data in Progress Report</td>
</tr>
<tr>
<td>E</td>
<td>Institutional and MARC U-STAR underrepresented Ph.D. Rates</td>
<td>N/A*</td>
<td>Yes</td>
<td>Suggested format, include data in Progress Report</td>
</tr>
<tr>
<td>2</td>
<td>Participating Faculty Members</td>
<td>Yes</td>
<td>Yes</td>
<td>Required, upload in Data Tables Section</td>
</tr>
<tr>
<td>4</td>
<td>Research Support of Participating Faculty Members</td>
<td>Yes</td>
<td>Yes</td>
<td>Required, upload in Data Tables Section</td>
</tr>
<tr>
<td>8D</td>
<td>Program Outcomes: Undergraduate</td>
<td>N/A*</td>
<td>Yes, Part I</td>
<td>Required, upload in Data Tables Section</td>
</tr>
</tbody>
</table>

* Not Applicable

Tables 3 and 5C are not required for MARC U-STAR applications. If you choose to include them, upload in the “Data Table” section of the application.
Table A: Current Institutional Setting

- Allows reviewers to assess the current student population which includes total number of students and percentage of UR students in proposed MARC departments and their graduation rates.

- Summarize and include the analysis in the Background section.

- Include the data for Table A in the Program Plan.
## Table A: Current Institutional Setting Example

**Institution Name:** XXX University  
**Carnegie Classification:** Research Intensive  
**Most recent full academic year:** 2015

<table>
<thead>
<tr>
<th>Name the Proposed MARC Departments †</th>
<th>Biology</th>
<th>Chemistry</th>
<th>Chemical engineering</th>
<th>Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current number UR ‡ students in proposed MARC departments ‡</td>
<td>120</td>
<td>110</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Current number of honors § UR ‡ students in proposed MARC departments</td>
<td>80</td>
<td>70</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>Total number of students in proposed MARC departments</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student graduation rate in proposed MARC departments ‡ ‡</td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subtotal (#)</th>
<th>Percentage UR ‡ students in proposed MARC departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>38%</td>
<td></td>
</tr>
</tbody>
</table>

* The most recent full academic year with reliable data; all data on Table A pertains to that year  
† MARC departments should prepare students to be competitive for entering a Ph.D. in a biomedically relevant area, e.g., biology, chemistry, physics, math, certain engineering fields, etc.  
‡ UR, underrepresented, as defined by the NIH  
§ Honors, as defined by the applicant institution  
¥ Non-UR, students who are not from underrepresented Groups  
†† If unable to identify institutional graduation rates for the science fields, overall graduate rate data may be provided through NCES or the Chronicle of Higher Education.
Table B. Institutional Biomedical Ph.D. Completion Data

- Allows the reviewers to assess total number of UR students who entered or completed B.S./B.A. in biomedically-related science fields in comparison to total number of students entered or completed B.S./B.A for the past 5 years.
- Summarize and include the analysis in the Background section.
- Include the data for Table B in the Program Plan.
### Table B: Institutional Biomedical Ph.D. Completion Data Example

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Year 1 2011</th>
<th>Year 2 2012</th>
<th>Year 3 2013</th>
<th>Year 4 2014</th>
<th>Year 5 (Current*) 2015</th>
<th>Ph.D. Baseline Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of UR‡ students earning B.S./B.A. in biomedically-related science fields</td>
<td>250</td>
<td>280</td>
<td>300</td>
<td>350</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>Number UR‡ B.S./B.A. alumni COMPLETED biomedically relevant Ph.D. programs†</td>
<td>15</td>
<td>12</td>
<td>19</td>
<td>20</td>
<td>25</td>
<td>6-7%</td>
</tr>
<tr>
<td>Total number of students earning B.S./B.A. in biomedically-related science fields</td>
<td>750</td>
<td>760</td>
<td>780</td>
<td>800</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Total number of B.S./B.A. alumni COMPLETED biomedically relevant Ph.D. programs†</td>
<td>150</td>
<td>160</td>
<td>200</td>
<td>250</td>
<td>280</td>
<td>28%</td>
</tr>
</tbody>
</table>

* The most recent full academic year

‡UR, underrepresented, as defined by the NIH

† includes Ph.D. as well as M.D./Ph.D programs in areas such as biology, chemistry, physics, math, and certain biomedical engineering fields. Data are available through WebCasper and the National Student Clearinghouse databases. Additional information may be obtained from records kept at the applicant institution through resources such as the Office of the Registrar, Office of Institutional Planning and/or Research, Alumni Office, Office of Institutional Development, Office of Sponsored Programs, etc.
Table C: Current Science Diversity-Focused Student Programs

- Allows the reviewers to assess the existing Diversity-focused program directed towards increasing the number of UR individuals in science fields at the institution.
- Summarize and include the analysis in the Background section.
- Include the date for Table C in the Program Plan.
### Table C: Current Science Diversity-Focused Student Programs Example

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
<th>Program 4</th>
<th>Program 5</th>
<th>Program 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM Diversity‡ Program Name</td>
<td>Dow STEM Scholars Program</td>
<td>IMSD</td>
<td>RISE</td>
<td>PREP</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Program Duration (in years) since inception</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>9</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Funding Source (Entity)</td>
<td>MSU</td>
<td>NIH</td>
<td>NIH</td>
<td>NIH</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Participant Number</td>
<td>240</td>
<td>10</td>
<td>20</td>
<td>12</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Student Population Targeted (academic level)</td>
<td>High school to Undergrad</td>
<td>Undergrad</td>
<td>Ph.D.</td>
<td>Undergrad</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*The most recent full academic year; all data on Table C pertains to that year
‡Diversity-focused program directed towards increasing the number of underrepresented individuals in science fields
Tables D1- D3: Past MARC Trainee Period - Renewals

• Allows the reviewers to assess the effectiveness of the supported training program in achieving the training objectives of the prior award period(s) for 5, 10, or 15 years as applicable.

• Summarize and include the analysis in the Program Evaluation Section.

• Include the data for the table (D1: 5 years, D2: 10 years, or D3: 15 years) in the Progress Report section.
### Table D.1: 5 Year Past MARC Trainee Record Example

<table>
<thead>
<tr>
<th>Row</th>
<th>ITEM</th>
<th>Year 1 2011</th>
<th>Year 2 2012</th>
<th>Year 3 2013</th>
<th>Year 4 2014</th>
<th>Year 5 (Current*) 2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of MARC slots awarded:</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Number of MARC slots appointed:</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Number of Junior level trainees appointed:</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Number of Senior level trainees appointed:</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Number of trainees who left MARC program without graduating:</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Number of trainees who graduated with B.S. or B.A.:</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Number of MARC alumni enrolled in Ph.D. or M.D./Ph.D. programs:</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Number of MARC alumni completed Ph.D. or M.D./Ph.D. programs:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Number of MARC alumni enrolled in/completed M.D. programs:</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Number of MARC alumni enrolled in/completed M.S. programs:</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Number of MARC alumni enrolled in/completed post-bac programs:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Number of MARC alumni enrolled in/completed other higher degree program†:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*The most recent full academic year

†includes D.O. and clinical doctorate programs such as Pharm.D., D.D.S., D.M.D., D.V.M.
Table E. Institutional and MARC U-STAR Underrepresented Ph.D. Rates - Renewals

- Allows the reviewers to assess the effectiveness of the supported training program in achieving the training objectives of MARC U-STAR award for prior award of 5 years as applicable.

- Summarize and include the analysis in the Program Evaluation Section.

- Include the data for Table E in the Progress Report section of the application.
### Table E. Institutional and MARC U-STAR Underrepresented Ph.D. Rates Example

<table>
<thead>
<tr>
<th>Row</th>
<th>ITEM</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>MARC U-STAR Ph.D. Numbers</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Total Number MARC Individuals Appointed in the last 5 years*</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Total Number MARC alumni who ENTERED biomedically-related† Ph.D. programs¥ in the last 5 years</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Total Number MARC alumni who are ENROLLED in or COMPLETED biomedically-related† Ph.D. programs¥ in the last 5 years</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Percentage of MARC alumni who are ENROLLED in or COMPLETED biomedically-related† Ph.D. programs¥ in the last 5 years</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td><strong>Institutional UR‡ Ph.D. Numbers</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Total Number UR‡ B.S./B.A. alumni in biomedically-related† fields in the last 5 years</td>
<td>200</td>
</tr>
<tr>
<td>6</td>
<td>Total Number UR‡ B.S./B.A. alumni who ENTERED biomedically-related† Ph.D. programs in the last 5 years</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>Number UR‡ B.S./B.A. alumni who ENROLLED in or COMPLETED biomedically-related† Ph.D. programs¥ in the last 5 years</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Percentage of UR‡ B.S./B.A. alumni who ENROLLED in or COMPLETED biomedically-related† Ph.D. programs¥ in the last 5 years</td>
<td>10%</td>
</tr>
</tbody>
</table>

* Provide numbers for individuals over the past 5 years  
† biomedically-related areas include, biology, chemistry, physics, math, certain engineering fields, etc.  
‡ UR, underrepresented, as defined by the NIH  
¥ includes Ph.D. as well as M.D./Ph.D programs
Table 2. Participating Faculty Members

- Allows reviewers to assess the distribution of participating faculty by rank, research interests, and department or interdepartmental program. Faculty mentoring records permit an evaluation of the experience of participating faculty in facilitating the progression of trainees.

- Summarize and analyze these data in the Background section and the program faculty section of the program plan. Upload the Table under Data Tables (Do not include this table under other attachments).
<table>
<thead>
<tr>
<th>Name</th>
<th>Degree(s)</th>
<th>Rank</th>
<th>Primary Department or Program</th>
<th>Research Interest</th>
<th>Training Role</th>
<th>Undergraduates In Training</th>
<th>Undergraduates Graduated</th>
<th>Undergraduates Continued in Research or Related Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrams-Johnson, Jane</td>
<td>PhD</td>
<td>Asst. Prof.</td>
<td>Pharmacology</td>
<td>Regulation of Synthesis of Biogenic Amines</td>
<td>Preceptor</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Jones, Lisa S.</td>
<td>PhD</td>
<td>Res. Asst. Prof.</td>
<td>Biochemistry</td>
<td>Protein Structure, Folding, and Immunogenicity</td>
<td>Preceptor</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sandoz, Miguel J.</td>
<td>MD, PhD</td>
<td>Assoc. Prof.</td>
<td>Neuroscience</td>
<td>Developmental Genetics in Drosophila</td>
<td>Preceptor</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Thomas, James C.</td>
<td>PhD</td>
<td>Prof.</td>
<td>Biochemistry</td>
<td>Molecular and Genetic Analysis of RNA Viruses</td>
<td>PD/PI</td>
<td>7</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

Mentoring Information for the last 10 years
Table 4. Research Support of Participating Faculty Members

• Provides evidence of the strength of the research environment, the availability of funds to support research conducted by the trainees, and the appropriateness of the participating faculty in terms of their active research support.

• Analyze and summarize these data in the Program Plan.

• Upload the Table under Data Tables (Do not include this table under other attachments).
### Table 4. Research Support of Participating Faculty Members

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Funding Source</th>
<th>Grant Number</th>
<th>Role on Project</th>
<th>Grant Title</th>
<th>Project Period</th>
<th>Current Year Direct Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones, Janine L.</td>
<td>NIH</td>
<td>1 R01 GM76259-01</td>
<td>PD/PI</td>
<td>Structure and Function of Acetylcholine Receptors</td>
<td>06/2014-05/2018</td>
<td>$190,000</td>
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<tr>
<td>Jones, Janine L.</td>
<td>NIH</td>
<td>5 K08 AI00091-03</td>
<td>PD/PI</td>
<td>Purification &amp; Identification of Receptors</td>
<td>11/2012-11/2017</td>
<td>$140,000</td>
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<tr>
<td>Ehlers, Roger G.</td>
<td>Univ</td>
<td></td>
<td>PD/PI</td>
<td>University start-up funds</td>
<td>08/2014-07/2017</td>
<td>$350,000</td>
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<tr>
<td>Mack, Thomas R.</td>
<td>Fdn</td>
<td></td>
<td>PD/PI</td>
<td>Control of Angiogenesis</td>
<td>03/2011-02/2015</td>
<td>$185,000</td>
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<tr>
<td>Mack, Thomas R.</td>
<td>NSF</td>
<td>PCM 80-12935</td>
<td>PD/PI</td>
<td>Cell Culture Center</td>
<td>12/2012-11/2015</td>
<td>$180,000</td>
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<td>Mack, Thomas R.</td>
<td>NIH</td>
<td>1 P01 HL71802-05</td>
<td>Project PI</td>
<td>Subproject 4: Oncogenic Kit Receptor Signaling in vivo</td>
<td>10/2011-09/2015</td>
<td>$165,000</td>
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<tr>
<td>Smith, James P.</td>
<td>None</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td>Zachary, Andrew</td>
<td>NIH</td>
<td>1 U01 AI28507-01</td>
<td>PD/PI</td>
<td>Human Monoclonal Antibodies as a Therapy for Staphylococcal Enterotoxin</td>
<td>07/2013-06/2018</td>
<td>$200,000</td>
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<tr>
<td>Average Grant Support per Participating Faculty Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$282,000</td>
</tr>
</tbody>
</table>
Table 8D. Program outcomes: Undergraduate – Renewals (Part I)

• For new applications, Table 8D is not required.

• For renewal applications, this table provides information about the use of undergraduate training positions (e.g., distribution by faculty member, year in program, years of support per undergraduate student). The data also permits an evaluation of the effectiveness of the supported training program in achieving the training objectives of the prior award period(s) for up to 15 years. Summarize the data in the Program Plan Section or the Progress Report Section, as appropriate.

• Upload the Table under Data Tables (Do not include this table under other attachments).
### Table 8D. Program outcomes: Undergraduate Example

#### Part I. Those Appointed to the Training Grant

<table>
<thead>
<tr>
<th>Undergraduate Student Participant</th>
<th>Faculty Member</th>
<th>Start Date</th>
<th>Summary of Support During Training</th>
<th>Degree(s) Received and Year(s)</th>
<th>Topic of Research Project</th>
<th>Initial Position Department Institution Activity</th>
<th>Current Position Department Institution Activity</th>
<th>Subsequent Grant(s)/Role/Year Awarded</th>
</tr>
</thead>
</table>
| Cox, Charles C. Lewis, John Smith, Jerry | 09/1995 | TY 3: **GM T34**  
TY 4: **GM T34** | BS 1997  
PhD 2001  
MD 2003 | The role of Notch in blood vessel maturation | MSTP Student/Dept of Cell Biology/UTHSC Dallas | Assistant Professor Hematology Rutgers University Research-Related | HL K23/PI/2006  
HL P01/Co-I/2011 |
| Johnson, Gina R. Lewis, John | 09/1998 | TY 3: **GM T34**  
TY 4: **GM T34** | BS 2000  
PhD 2005 | Interactions between circadian rhythms, sleep & metabolism | Grad student Molecular Biology UC San Francisco | Assistant Prof Molecular Biology UC San Francisco Research-Intensive | HL F32 2006  
GM R01/PI/2011 |
| Phelps, Ryan Vasquez, Richard | 09/1999 | TY 3: **GML T34**  
TY 4: **GM T34** | BS 2001  
MS 2004 | Viral infections | Grad Student/Dept of Microbiology/Temple University | Laboratory Manager Pfizer Research-Related | |
### Table 8D. Program outcomes: Undergraduate Example (cont.)

**Part I. Those Appointed to the Training Grant**

<table>
<thead>
<tr>
<th>Undergraduate Student Participant</th>
<th>Faculty Member</th>
<th>Start Date</th>
<th>Summary of Support During Training</th>
<th>Degree(s) Received and Year(s)</th>
<th>Topic of Research Project</th>
<th>Initial Position Department Institution Activity</th>
<th>Current Position Department Institution Activity</th>
<th>Subsequent Grant(s)/Role/Year Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miller, Fred</td>
<td>Harper, Bruce &amp; Smith, Jerry</td>
<td>09/2011</td>
<td>TY 3: GM T34 TY 4: GM T34</td>
<td>BS, 2013</td>
<td>Effect of manganese catalysts on fluorination reactions</td>
<td>3rd Yr Graduate Student, Dept Biochemistry Emory University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smith, Pamela</td>
<td>Sanchez, Augusto</td>
<td>09/2012</td>
<td>TY2: GM R25 TY 3: GM T34 TY 4: GM T34</td>
<td>BS, 2014</td>
<td>Role of unsaturated lipids in pore formation in mitochondrial membranes</td>
<td>1st Yr Grad Student, Dept of Genetics, UC San Francisco</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estrada, Alberto</td>
<td>Vasquez, Esther</td>
<td>09/2014</td>
<td>TY 3: GM T34 TY 4: GM T34</td>
<td>BS expected 2016</td>
<td>Epigenetic effects on aging</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Advisory Committee Plan

• A plan must be provided for the appointment of an Advisory Committee to monitor program and trainee progress. Composition, member expertise, responsibilities, frequency of meetings, and other relevant information should be included.

• Describe how the Advisory Committee will function in providing oversight of the development, implementation, and evaluation of recruitment strategies, the recruitment and retention of participants, and the evaluation of the overall effectiveness of the program.

• A plan for Advisory Committee selection and approval of MARC U-STAR participants should be included.
Peer Review

• Please read the review criteria while preparing your application to make sure all of the required information is included.

• Review panel will assess your application against the review criteria.
Appendix Policy

• The list of acceptable materials appears below (you may also refer to NOT-OD-07-018 and NOT-OD-11-100). Do not include data tables (A-E, 2, 4, and 8D) in the Appendix.

• For training programs, the appendix may be used to provide samples of materials that are referred to in the body of the application. Examples include:
  
  o Syllabi for key courses, core courses and electives, including courses in Responsible Conduct of Research, Survival Skills for Research, etc.;

  o Retreat, seminar series, and other program activity agendas, rosters, and schedules (for the past one or two years only);

  o Examples of forms used to document trainee progress and monitoring by the program;

  o Examples of materials used in recruitment and particularly recruitment and retention to enhance diversity of the student pool;

  o Lists of meetings attended by students and their presentations (during the last two years); and

  o Trainee biosketches (current trainees only).
Overview

- FAQs about MARC U-STAR FOA: https://www.nigms.nih.gov/Training/MARC/Pages/FAQs.aspx
Overview, cont.

• Biosketch Requirements:

• Biosketch FAQs:

• New Biosketch Formats:
Changes in the T34 application for May 25th deadline

- New PHS Assignment Request Form
- New Font Guidelines - NOT-OD-009
  - 15 characters/inch, 6 lines/inch
- New Biosketch
- FORMS D Package
New Biosketch

• All biosketches must be in the new format.
• Up to 5 pages
• URLs for a publication list is optional but, if provided, must be to a government website (.gov)
• Publications and research products can be cited in both the personal statement and the contributions to science sections
• Graphics, figures and tables are not allowed
Biosketch Format

A. Personal Statement
   - Why you are well suited for the role (May include up to four peer reviewed publications that highlight experience and qualifications)

B. Positions and Honors

C. Contributions to Science
   - Up to 5 of the most significant contributions. For each contribution
     - Indicate historical background that frame the scientific problem
     - Influence of finding(s) on progress of science or application of finding(s) to health and technology
     - Your specific role in the described work
Biosketch Format (continued)

C. Contributions to Science (Continued)

- Reference up to 4 relevant peer-reviewed publications or other research products
  - May provide URL to full list of published work

D. Research support

  Current
  Pending
  Past

(5 pages max)
Reminder

You must use updated grant application forms and instructions (FORMS-D) for NIH due dates on or after May 25, 2016 to be eligible for funding consideration.

Resources to help with the transition:

- [Do I have the right forms for my application?](http://grants.nih.gov/grants/ElectronicReceipt/files/right_forms.pdf)
- FAQs
  - [http://grants.nih.gov/grants/forms_updates_faq.htm](http://grants.nih.gov/grants/forms_updates_faq.htm)
FORMS D: Annotated

- Annotated Forms for FORMS-D

Questions

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Rebecca Johnson: JohnsoRe@nigms.nih.gov

Sailaja Koduri: sailaja.koduri@nih.gov

National Institute of General Medical Sciences