# Table of Contents

INTRODUCTION AND BACKGROUND .................................................................................................................. 2

RESEARCH TRAINING CURRICULUM .................................................................................................................. 2

Career Mentoring .............................................................................................................................................. 2

  - Matrix Mentoring Model .......................................................................................................................... 2
  - Mentoring Levels and Responsibilities .................................................................................................. 3

Individual Development Plan (IDP) .................................................................................................................. 5

Master of Science in Clinical Investigation Program (MSCI) ........................................................................... 5

Grant Writing Experience ............................................................................................................................... 5

Pre-Submission Grant Reviews ....................................................................................................................... 5

Pre-Award Support .......................................................................................................................................... 6

Participation in Writing Workshop or Writing Assistance ............................................................................ 6

Responsible Conduct of Research ................................................................................................................ 7

MEETINGS WITH PROGRAM DIRECTORS ................................................................................................... 7

REPORTS .......................................................................................................................................................... 8

APPENDICES .................................................................................................................................................... 9

  - Appendix 1. Utah StARR Individual Development Plan ............................................................................ 10
  - Appendix 2: Time Line .................................................................................................................................. 17
  - Appendix 3. Primary Scientific Mentoring Partnership Agreement ......................................................... 18
  - Appendix 4. Scientific Mentoring Team Plan .......................................................................................... 19
  - Appendix 5. Research Investigator Certificate ......................................................................................... 20
  - Appendix 6. Grant Writing Resources ..................................................................................................... 21
  - Appendix 7. Responsible Conduct of Research ....................................................................................... 24
  - Appendix 9. Mentor’s Report on Scholar’s Progress ............................................................................... 26
  - Appendix 10. End-of-Program Report ..................................................................................................... 28
INTRODUCTION AND BACKGROUND

“Our program’s vision is to develop highly trained successful academic investigators with the research leadership and mentoring skills necessary to cultivate ongoing generations of clinical scientist from primary care-serving specialties.”

The Utah Stimulating Access to Research in Residency (Utah StARR) is designed to prepare outstanding residents for a career in academic medicine and clinical investigation by providing them with opportunities to learn and practice clinical, transitional, health service and community-engaged research skills during their residency training. Utah StARR will provide an early "on-ramp" to research careers for competitive academic faculty positions.

Utah StARR program is committed to prepare resident investigators from primary care-serving specialties to successfully transition to funded physician investigator careers in their chosen subspecialties. The program utilizes the Matrix Mentoring Model to guide, mentor, and support scholar’s Scientific Career Development goals. Utah StARR has established curricula and resources necessary to enhance access to resources facilitating appropriate study design, collection of data, and preparation and submission of manuscripts and future grant applications.

RESEARCH TRAINING CURRICULUM

Utah StARR curriculum has a focuses on competencies, essential knowledge and practical skills to become an effective investigator. The curriculum will include:

- Career Mentoring
- Individual Development Plan (IDP)
- Non-degree coursework
- Research Seminars
- Grant Writing
- Pre-submission Grant Review
- Pre-award Support Writing Workshops

Career Mentoring

Matrix Mentoring Model

The Matrix Mentoring Model\(^1\) supports Utah StARR scholars with a holistic framework that includes five levels of mentorship. The different types of mentorship are synergistic and create a nurturing environment that fosters accountability, communication, and skills development to create empowered clinical investigators. As you prepare your research and career goals, consider the members of your mentoring matrix and how they can best be utilized to ensure your ultimate success.

<table>
<thead>
<tr>
<th>Mentorship level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-mentorship</td>
<td>Investigators are able to be their own best mentors. Understanding your priorities is critical as you advance in your faculty role and must make decisions regarding the investment of your time across a variety of valuable academic endeavors.</td>
</tr>
<tr>
<td>Senior mentorship</td>
<td>Senior mentors are experienced, NIH grant-funded, understand the faculty advancement process, familiar with institutional resources, and have previous mentoring experience. Gaining guidance and feedback from your senior mentor on your research project, goals and maintaining regular meetings and evaluations will greatly improve your likelihood for success.</td>
</tr>
<tr>
<td>Scientific mentorship</td>
<td>The scientific mentor(s) provide specific skills in research methodology or clinical expertise specific to your area of interest. Their experience in your field will enhance the discussion and feedback on your goals.</td>
</tr>
<tr>
<td>Peer mentorship</td>
<td>By establishing productive relationships with your peers, you gain from interactions at an interdisciplinary level.</td>
</tr>
<tr>
<td>Staff mentorship</td>
<td>Speak with your grant administrators and other close staff to gain a different perspective in solidifying and working towards your goals.</td>
</tr>
</tbody>
</table>

**Mentoring Levels and Responsibilities**

1. **Self-Mentoring**

To be an effective **self-mentor**--and an effective mentee--it is important that scholars give themselves space and time to create a plan outlining their short- and long-term goals. Having this plan in place will help focus their efforts and interactions with their mentors. To assist scholars in this process, they will receive a *Utah StARR Individual Development Plan (IDP)* (Appendix 1). The IDP will help them define where they place their efforts, define their career vision and research interest, and to create goals that help them succeed in academic medicine.

**Scholar’s responsibility:** As a self-mentor, scholars will need to ensure that they allow themselves time for self-reflection in order to determine their true priorities and develop, revise and update their IDP. Scholars are also responsible to develop their *Utah StARR Program Timeline* (Appendix 2) and revise it with the Program Director(s). We advise scholars to provide themselves with time to fully consider what opportunities, resources, and support they will need to succeed. Scholars will also need to ensure that they have the right people around them to help them in their journey. This may include mentors, peers, friends, and family. We encourage scholars to talk to and engage with these people. Many of the resources scholars need--both personally and professionally--will come from these interactions.

2. **Senior Mentoring**

Senior mentorship will be implemented by matching each StARR scholar with a **senior mentor** with track record of NIH grant funding based on recommendations from the scholar’s department chair and/or division director and interviewed by the Drs. Okuyemi and Conroy. The senior mentor and program staff will assist each scholar in identifying scientific mentors that will constitute his/her **Scientific Mentoring Team**.
Scholar’s Responsibility: Scholars are required to meet with their senior mentor twice yearly to review scholar’s progress. However, to receive the greatest benefit from the program, we highly recommend that scholars meet with senior mentors quarterly.

3. Scientific Mentoring Team

Scientific mentoring team serves as a scholar’s research content experts and advisors. The StARR scholar scientific mentoring team (SMT) consists of a minimum three people one of which will serve as the primary scientific mentor. Their role is to ensure that the science for a scholar’s research are both rigorous and comprehensive. They will help to ensure that scholars have access to the resources necessary to complete their projects. Mentors will not be limited to the department in which the resident is housed, but will be selected from across the University of Utah Health Sciences, based on mentor qualifications and fit with the individual interests of each resident.

Scholar’s Responsibility with Primary Scientific Mentor:
- Scholars are required to define and establish a partnership (Appendix 3)
- Scholar will meet regularly at a mutually agreed intervals
  - No less than bi-weekly during research blocks (weekly encouraged)
  - No less than monthly during clinical rotations

Scholar’s Responsibility with Scientific Mentoring Team:
- Scholars are required to create a SMT plan (Appendix 4) and are expected to follow this plan, and fulfill competencies outlined in the plan
- Meet with SMT no less than monthly to assess progress
- Scholars are to work very closely with their scientific mentor(s)

4. Peer Mentoring

Peer mentor(s) are trainees that have experienced some of the same transitions and situations you may face as you progress through your research career. They can share similar experiences, concerns, problems and solutions. They may not be within a scholar’s department or field, yet they can give relatable advice and perspectives to assist a scholar in navigating various aspects of their research. Utah StARR scholars will join scholars from these other institutional programs to receive a training program called The Research Investigator Certificate. His program is designed for faculty members, postdoctoral scholars and graduate students, acknowledges continuing education and professional development in the context of scientific management training. The content of the program is designed to improve knowledge and skills in scientific career development, grant writing, pre-award and post-award grants management, and leadership.

Responsibility: Scholars will enroll in the Research Investigator Certificate. More details found in Appendix 5.

5. Staff Mentoring

In the staff mentoring component of the MMM, scholars engage non-faculty staff from the Academic Affairs and Faculty Development Office of the UofU Health Sciences. Specifically, these are staff members with expertise in grant preparation as well as statistical analysis and data management. These staff members join the senior mentors’ meetings with the scholars as needed and also help teach in the MEPI program. Scholars will work closely with these non-faculty staff members before and during their
research grant preparation and submission process. Participating in the staff mentoring activity gives StARR scholars a better appreciation for the time and resources required for a successful grant submission. They will also gain understanding of the indispensable roles non-staff members will have in their ultimate success as principal investigators.

**Responsibility:** Recognizing the expertise, resources, services, and support provided by administrators and staff is a necessity for scholars. Scholars will need to get to know and have a basic understanding of their administrator’s processes, responsibilities, roles, and strengths.

**Individual Development Plan (IDP)**

The IDP will help he scholars define where they place their efforts, define their career vision and research interest, and to create goals that help them succeed in academic medicine. Utah StARR scholars will complete an IDP under guidance of Project Director(s) shortly after first research block. Scholar will bring IDP template to initial meeting with Project Director to begin discussion. Each scholar will work with their mentoring team, their program directors, department chairs, and Drs. Okuyemi and/or Conroy in an iterative process to develop their IDP. The IDP is meant to be living document that will be reviewed with mentoring teams on a regular basis and at least twice yearly.

**Master of Science in Clinical Investigation Program (MSCI)**

The Utah StARR resident-investigators who do not have documented evidence of formal research coursework such as a Masters or PhD degree in relevant areas will be encouraged to enroll as non-degree seeking students in the UofU Master of Science in Clinical Investigation (MSCI) courses. The courses will be selected with advice of their research preceptors and Drs. Conroy and Okuyemi and will not exceed one course/semester so as not to interfere with other research and career development activities. Information on MSCI courses offered and schedule are found [here](https://medicine.utah.edu/ccts/workforce-development/msci/)

**Registration:** MSCI non-academic work at University of Utah is done through Continuing Education & Community Engagement. Click [here](https://medicine.utah.edu/ccts/workforce-development/msci/) to register. Choose the by mail option so we can complete the payment on your behalf. Please forward registration confirmation to UtahStARR@utah.edu. Please contact the program’s manager for further instructions at UtahStARR@utah.edu.

**Grant Writing Experience**

Scholars will be required to pursue grant-writing in one or more of the forms available at the UofU. Details found in Appendix 6. Options include:

- **MDCRC 6450**, a semester long course, in which all students write, critique, and revised a complete NIH grant. Taught by Dr. Murtaugh (CCTS KL2 PI)
- **Research Education Grant Writing Academy (GWA)** a 2½ day intensive program
- **Grant Writing workshops provided by CCTS.** Information on workshops are found on the news section of the CCTS webpage. [here](https://medicine.utah.edu/ccts/news/)
- National Research Mentoring Network (NRMN; nrmnet.net) which offers four options of programs in grantsmanship coaching groups tailored to participants’ level of readiness and experience with grant-writing

**Pre-Submission Grant Reviews**

The Utah StARR program will provide its scholars with the opportunity to have their grants reviewed prior to submission. Scholars will be required to submit an “Intent for Application Review” letter to the StARR program coordinator at least two months to their grant submission deadline. The program manager will then work with the scholar and suggested reviewers to schedule a review date.
The intent letter components include:

- Title of proposed application
- Funding agency
- Grant mechanism
- Submission due date,
- Specific Aims or Project Abstract
- Names of at least two senior faculty with content expertise in the topic of the application that could serve as reviewers (ideally would include members of the scholars mentoring team).

Scholars will be required to submit their **full grant application** at least **four weeks** before application due date and reviewers will be given assigned application at least three weeks prior to the review date. The review panel will use an NIH Study Section style procedure and will be chaired by either Dr. Okuyemi or Dr. Conroy. It will include three reviewers along with the program coordinator to take notes from the panel discussion. For K-type applications, reviewers will be asked to provide written critiques and assign scores (1-9 scale) for each categories of Candidate, Career Development Plan/Career Goals & Objectives/Plan to Provide Mentoring, Research Plan, Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s), and Environment and Institutional Commitment to the Candidate. For R-type applications, reviewers will use the following categories: Significance, Innovation, Investigators, Approach, and Environment and award an Overall Impact score to each application. The program coordinator will provide the scholar the Summary Statement within one week of the review meeting. This timeline will leave the scholar with at least a few weeks to make necessary revisions to his/her application prior to submission to NIH.

**Pre-Award Support**

All Utah StARR scholars will receive pre-award support from pre-award staff in the Office of Vice President for Research who are dedicated to providing pre-award support for training grants. The team is led by Ms. Erin Wachs who has 14 years of experience in the pre-award arena. She optimizes biosketches, resource pages, budgets, cover letters, and training plans. She will coordinate with Drs. Okuyemi and Conroy and the scholar’s research and career mentors to address scientific, ethical, or other methodologic issues. Study design and biostatistics consultation will be made available at no cost to the scholars’ research or training budget through the Study Design and Biostatistics Center ([http://medicine.utah.edu/ccts/sdbc/](http://medicine.utah.edu/ccts/sdbc/)) of the Utah CCTS.

**Participation in Writing Workshop or Writing Assistance**

Scholars will participate in writing groups and present one of their manuscripts or grants that is in progress to elicit feedback and maintain steady progress on their writing goals. We have found that regular writing workshops promote steady progress and accountability for busy physician researchers and thereby increase academic productivity for trainees. Writing groups options include:

**Writing & Publishing A Scientific Paper Workshop- FAES@NIH**

This four-session, writing-intensive workshop is designed for NIH trainees and biomedical scientists. Participants will write a draft of a research paper based on data generated from their current or previous study for publication in a peer-reviewed science journal. This workshop focuses on the organization of a scientific research paper, with an emphasis on the two most difficult sections to write, Introduction and Discussion. It will also cover designing tables and figures and writing a clear and concise abstract and cover letter for submission to a science journal. In addition, participants will learn about the publication process from a science journal editor’s perspective, along with how to choose the right science journal for their paper as well as how to guide peer review. Participants will receive and provide feedback on weekly written assignments through peer review groups and will also receive
feedback from the instructor. Scholars have the opportunity to participate via live webinar. More information at https://faes.org/content/writing-publishing-scientific-paper-workshop

**University of Utah Writing Center – Assistance via email**

The University Writing Center (UWC) and the Vice President for Research are offer convenient writing assistance to faculty members working on projects such as grants, articles for publication, and research reports. The Faculty Writing Fellow can help faculty members with focusing arguments, organizing ideas, supporting claims, citing others’ works, and maintaining field conventions. All correspondence is done via email. Each submission should be no longer than 25 pages; longer works will need to be broken down into smaller pieces. Writing assistance for faculty is offered in the following areas: Manuscript Protocol, Grants, Articles for publication, Research proposals, Conference presentations, and Conference publications. For more information please contact Anne McMurtrey, Director, Writing Center at anne.mcmurtrey@utah.edu

**University of Utah Science Writers consultation**

The university has a group of science writers based on both the main and health campus whose expertise is developing strategies for reporting science research on campus and beyond. They are available if you would like to promote your own work, as well as being a resource for learning about science writing. While they don’t have a formal mentoring program, they are happy to connect with graduate students and postdocs. Contact Julie Kiefer at Julie.kiefer@hsc.utah.edu.

**Responsible Conduct of Research**

One of the most important aspects of scientific training and a priority for this Utah StARR program is the scholar’s training in the Responsible Conduct of Research (RCR). In addition to both formal and informal RCR training with mentors, all scholars are required to participate in RCR training certificate that fulfills the NIH requirements for instruction in the RCR. Through its Research Administration Training Series (RATS), the University has developed a robust and comprehensive training curriculum for faculty and staff addressing regulatory issues, as well as a full range of other courses on topics from pre-award through post-award management. Upon completion of 10 hours of instruction which exceeds the minimum NIH requirement of eight contact hours, a RCR certificate is issued to the scholar. Scholars are required to earn the RCR certificate during their Utah StARR training. All scholars will repeat the certification every 4 years and at least once during each career stage during program participation as per NIH guidelines. More information found in Appendix 7 and by contacting the Office of Research Education at 801-587-3958 or researcheducation@utah.edu.

**MEETINGS WITH PROGRAM DIRECTORS**

**Utah StARR Scholar Program Initial Meeting:** The Program Manager will set up this meeting. It will include the Utah StARR Scholar, Senior Mentor(s) and Program Director(s). This meeting will take place within the first 6 months of the program. The discussion revolves largely around the scholar’s goals and how all involved mentors and staff can assist a scholar in achieving these goals. Possible timelines for research blocks will be discussed as well as IDP.

**Pre-Research Block Meetings:** These meetings are held at the beginning of each research block. Scholars are responsible for scheduling this meeting with the Program Director(s). Generally, this meeting will only involve the Scholar and Program Director(s), but Scientific Mentor(s) can be invited to attend as you feel is appropriate. The goal of this meeting is to review the research plan for the coming research block.

**End-of-Research Block Meetings:** These meetings are held at the end of each research block. Scholars are responsible for scheduling this meeting with the Program Director(s). Generally, this meeting will only involve the Scholar and Program Director(s), but Scientific Mentor(s) can be invited to attend as you
feel is appropriate. The goals of these meetings include to determine a scholar’s progress within the program as well as how they perceive the success of their mentor(s) relationship.

**End-of-Program Progress Meeting**: This meeting is held at the end of a scholar’s Utah StARR scholar research training. Scholars are responsible for scheduling this meeting with the Program Director(s). Generally, the meeting will only involve the scholar and their Program Directors, but scientific mentor(s) can be invited to attend as you feel is appropriate. The focus of the meeting should be around the goals the scholar achieved during the program. Possible discussion points could include where the scholar is at with their research, publications, presentations, grant submissions, and career advancement as well as a transition plan to ensure they will have access to the support and resources needed to continue their research.

**REPORTS**

- Primary scientific mentor will use an *End-of-Research Block Report* (Appendix 8) to assess progress of each research block.
- Primary scientific mentor will submit a *Mentor’s Report on Scholar’s Progress* (Appendix 9) **yearly** to the Program Directors.
- Program’s director will use an *End-of-Program Progress Report* (Appendix 10) to assess scholar’s achievements in the program.
APPENDICES

Appendix 1: Individual Development Plan (IDP)
Appendix 2: Program Time Line
Appendix 3: Primary Scientific Mentoring Partnership Agreement
Appendix 4: Scientific Mentoring Team Plan
Appendix 5: The Research Investigator Certificate
Appendix 6: Grant Writing Resources
Appendix 7: Responsible Conduct of Research Resources
Appendix 8: End-of-Research Block Evaluation
Appendix 9: Mentor’s Report on Scholar’s Progress
Appendix 10: End-of-Program
Appendix 1. Utah StARR Individual Development Plan

**Instructions:** Once you have drafted this document, meet with you the Program’s Director(s) to review, refine, and finalize. There are 9 sections to be completed on your Individual Development Plan:

1. Overall Training and Research Objectives
2. SMART Goals: Career and Professional Goals
3. Identify a Vision and Mission for Your Career in Academic Medicine
4. Annual Goals for Different Areas of Your Work Life
5. Competencies to be developed during StARR program
6. Productivity Milestones
7. Prepare your NIH Biographical Sketch
8. Implement Your Individual Development Plan
9. Signatures

1. **Overall Training and Research Goals and Objectives**

   a. What are your short-term (12 months) training objectives? (Please be specific)

   b. What are your long-term training objectives (2-3 years). What are your plans after Utah StARR?

   c. Are you considering applying for a Stimulating Access to Research in Residency Transition Scholar (StARRTS, K-38) award after StARR?

   d. What are some motivating factors for pursuing the goals listed above?

   e. Are there any special circumstances or barriers that may make it challenging to achieve your goals for the upcoming year?

2. **SMART Goals** (minimum of 3 / maximum of 4)
- These are incremental learning goals to move you toward your overall career or professional goals. Develop these goals in collaboration with your mentors.

| Specific | • Does your goal clearly and specifically state what you are trying to achieve?  
| | • What is it you are trying to accomplish? (who and what) |
| Measurable | • How will you and your mentors know if progress is being made on your goal?  
| | • In what ways will you measure success? (how) |
| Action-Oriented & Attainable | • What results will you be able to see when your goals are accomplished?  
| | • What concrete things will you be able to do as a direct result of accomplishing these goals? |
| Relevant & Realistic | • Are these goals aligned with your projected career path?  
| | • What effect will achieving this goal have on your career?  
| | • Are there additional resources you need to achieve your goals? |
| Timely | • What is the time frame for achieving your goals? |

- After meeting with my mentors, we have identified the following training and research goals during Utah SMART program (12 months).

### SMART Goal 1

| SMART Goal 1: | | | | | |
| --- | --- | --- | --- | --- |
| Actions/Activities (do, what, why) | Resources Needed | Measures of Success | Target Dates | Date Completed |
| | | | | |
| | | | | |

Date to review progress:

<table>
<thead>
<tr>
<th>Challenges/Obstacles</th>
<th>How will you address these when and if they arise?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges/Obstacles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SMART Goal 2

| SMART Goal 2: | | | | | |
| --- | --- | --- | --- | --- |
| Actions/Activities (do, what, why) | Resources Needed | Measures of Success | Target Dates | Date Completed |
| | | | | |
| | | | | |
### SMART Goal 3

**SMART Goal 3:**

<table>
<thead>
<tr>
<th>Actions/Activities (do, what, why)</th>
<th>Resources Needed</th>
<th>Measures of Success</th>
<th>Target Dates</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date to review progress:**

### SMART Goal 4

**SMART Goal 4 (Optional):**

<table>
<thead>
<tr>
<th>Actions/Activities (do, what, why)</th>
<th>Resources Needed</th>
<th>Measures of Success</th>
<th>Target Dates</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date to review progress:**
3. Identify a Vision and Mission for Your Career in Academic Medicine

A career vision statement describes what the world looks and feels like as a result of your professional work. A clear, compelling vision can have a magnetic effect, pulling you towards it as you focus on your work.

Your vision statement will answer, "WHAT do I want to be a part of creating?"

Example vision statement: Both health professionals and the lay public will understand and integrate the benefits of appropriate nutrition and nutritional supplements in the prevention and management of chronic diseases.

My vision statement:

A career mission statement defines what you will do in order to achieve your vision. Your mission is the reason you work at a particular job or institution; it gives meaning to your work life. Simply put, your mission describes the difference you intend to make in the world through your professional accomplishments.

Your mission statement will answer, "HOW will I do my part to achieve the vision?"

Example mission statement: To expand and disseminate knowledge on the use of nutrition and nutritional supplements in managing chronic disease, especially heart disease, diabetes, and hypertension.

My mission statement:

4. Declare Annual Goals for Different Areas of Your Work Life
**My Utah StARR goals**

- Articulate goals for the coming year in all relevant professional development areas.
- Feel free to customize this template by deleting, adding, or altering the categories.

**Outline of plans for accomplishing my goals**

- What skills do I need to acquire?
- What professional development activities will aid me?
- What resources do I need?
- With whom will I collaborate?
- Who are potential mentors?
- How will I measure my outcomes and successes?
- What timeline and benchmarks will I set?

---

Research, Scholarship

Clinical Service

Professional Networking

Other

---

5. **Competencies to be developed during StARR program**

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Mode of learning</th>
<th>Y1</th>
<th>Y2</th>
<th>Y3</th>
<th>Y4</th>
<th>Y5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentored meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiential training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conferences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentored meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. **Productivity Milestones**

<table>
<thead>
<tr>
<th>Productivity Milestones</th>
<th>Y1</th>
<th>Y2</th>
<th>Y3</th>
<th>Y4</th>
<th>Y5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. **Prepare your NIH Biographical Sketch**

- Use NIH Fellowship Biosketch Format
- Try [SciENcv](https://www.ncbi.nlm.nih.gov/sciencv/) to help you develop your biosketch and automatically format it according to NIH requirements.
- Prepare a pre-program BioSketch and update as needed so you and your mentor can carefully track your training and research progress.

8. **Implement Your Individual Development Plan**

- Filling out your IDP is just the beginning of the career development process. The IDP serves as your roadmap. Don’t just file it away somewhere. Academic careers are increasingly difficult to manage, so paying attention to your milestones and ensuring your efforts are appropriately focused will help ensure a successful career.

- Plan to set meetings with your mentor(s) for the explicit purpose of reviewing and discussing your
IDP.

- Revise and modify this plan as necessary. It is not cast in concrete; it will need to be updated as circumstances and goals change. The challenge of implementation is to remain flexible and open to change.
Appendix 2: Time Line

Utah StARR Scholar Time Line

Residency Program: Family Medicine  Internal Medicine  Pediatrics

Start Date:
End Date:

Total research Training (months):
Total clinical Rotations (months):

Example: 36 months required Clinical Training plus 24 Months of Research Training

<table>
<thead>
<tr>
<th></th>
<th>July – September</th>
<th>October - December</th>
<th>January - March</th>
<th>April - June</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGY-1</td>
<td>Clinical Rotations (12 Months)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY-2</td>
<td>Research Training (3 Months)</td>
<td>Clinical Rotations (9 Months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY-3</td>
<td>Research Training (3 Months)</td>
<td>Clinical Rotations (9 Months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY-4</td>
<td>Research Training (3 Months)</td>
<td>Clinical Rotations (6 Months)</td>
<td>Research Training (3 Months)</td>
<td></td>
</tr>
<tr>
<td>PGY-5</td>
<td>Research Training (12 Months)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Research Training Blocks will include ongoing 1-2 half days a week of Clinical Activities

- Please indicate your research blocks and your clinical rotations. Please use example above.

<table>
<thead>
<tr>
<th>Block of 3 months</th>
<th>PGY-1</th>
<th>PGY-2</th>
<th>PGY-3</th>
<th>PGY-4</th>
<th>PGY-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Rotations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3. Primary Scientific Mentoring Partnership Agreement

Primary Scientific Mentoring Partnership Agreement

Primary Scientific Mentor (print name): Date:
Utah StARR Scholar (print name):

X_____ We have agreed on the following goals and objectives as the focus of this mentoring relationship:
   To develop a dynamic reciprocal relationship fostering professional growth
   To work towards the development of the scholars Individual Development Plan
   To introduce scholar to best practices in the discipline
   To identifying scientific mentors that will constitute the Scientific Mentoring Team

X_____ We have discussed the process by which we will work together. In order to ensure that our relationship is a mutually rewarding and satisfying experience for both of us, we agree to:

1. **Meet regularly**
   - We have agreed on the following intervals during research blocks that will be not less than bi-weekly (weekly encouraged) and ______ during clinical rotations.

2. **Look for multiple opportunities and experiences to enhance the scholar’s learning**
   - We have identified, and will commit to, the following specific opportunities and venues for learning:
     - Scholars will attend research group meetings
     - We will meet and discuss research group concerns following each meeting
     - Scholar will attend relevant workshops in professional development
     - Scholar will have at least 2 meetings with Scientific Mentoring Team

3. **Maintain confidentiality of our relationship.**
   - Confidentiality for us means that what we discuss project related remains between us
   - Mentor and mentee will agree ahead of time if specific project information is to be shared with anyone else

4. **Provide regular feedback to each other and evaluate progress. We will accomplish this by:**
   - Reviewing research and training goals regularly, discussing research study progress, and checking in with each other to make sure our individual needs are being met in the relationship, and periodically thereafter
   - **Primary Scientific Mentor will:**
     - Assess progress at the end of each research block using the End-of-Research Block Report (Appendix 4).
     - Submit the primary scientific mentor will submit a Mentor’s Report on Scholar’s Progress (Appendix 5) yearly to the Program Directors.

X_____ We agree to meet regularly until we have accomplished our predefined goals or for a maximum of twelve months. At the end of this period of time, we will review this agreement, evaluate our progress, and make determination for continuance of the relationship.
## Appendix 4. Scientific Mentoring Team Plan

**Utah StARR Scientific Mentoring Team Plan**

### Part 1: Project Details

<table>
<thead>
<tr>
<th>Type of project:</th>
<th>Utah StARR Clinical Research Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of proposed project:</td>
<td></td>
</tr>
<tr>
<td>Aims of planned research project:</td>
<td></td>
</tr>
<tr>
<td>Briefly describe the overall study design of planned project:</td>
<td></td>
</tr>
<tr>
<td>Identify the data collection methods that will be used:</td>
<td></td>
</tr>
<tr>
<td>State the primary data analysis approach(es) that will be applied</td>
<td></td>
</tr>
</tbody>
</table>

### Part 2. Scientific Mentoring Team

The scientific mentoring team consists of a minimum three people one of which will serve as the primary scientific mentor.

<table>
<thead>
<tr>
<th>Primary Scientific Mentor (last, first name, UID)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentor 2 (last, first name, UID)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentor 3 (last, first name, UID)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Part 3. Identify the roles of StARR scholar and Scientific Mentoring Team

<table>
<thead>
<tr>
<th>Contributed to or will contribute to:</th>
<th>StARR scholar</th>
<th>Primary Scientific Mentor</th>
<th>Mentor 2</th>
<th>Mentor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conception of the aims</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing the study design and methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deciding on the data analysis approach(es)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation of results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5. Research Investigator Certificate

The Research Investigator 10/6/20 Certificate, designed for faculty members, postdoctoral scholars and graduate students, acknowledges continuing education and professional development in the context of scientific management training. The content of the program is designed to improve knowledge and skills in scientific career development, grant writing, pre-award and post-award grants management, and leadership.

To enroll in the RIC certificate, first enroll here. Then please enroll in each individual course following the links below.

CORE CLASSES:
1. Investigator Orientation: Pre-Award Workshop
2. Investigator Orientation: Post-Award Workshop
3. Investigator Orientation: Researcher Resources and Funding Searches Workshop
4. Investigator Orientation: Responsible Conduct of Research (RCR) Workshop
5. Introduction to Technology Commercialization & Intellectual Property
6. Introduction to the IRB, the IACUC and the IBC

ELECTIVE CLASSES:
7., 8., 9. & 10. Choose any two classes of special interest from the general curriculum.

SUGGESTIONS INCLUDE:
- Case Studies in the Responsible Conduct of Research (RCR)
- Collaborative Research and the Roles of the Scientist in Society
- Getting Published: Responsible Authorship and Peer Review
- Grant-Writing Workshop: Community-Based Participatory Research
- Grant-Writing Workshop: Foundations and Charities
- Grant-Writing Workshop: The National Institutes of Health (NIH)
- Grant-Writing Workshop: The National Science Foundation (NSF)
- Introduction to Research Integrity
- Investigator Orientation: Clinical Research Workshop
- Laboratory Leadership and Staffing
- Mentoring Roles and Responsibilities
- Research Data Management and Sharing
Appendix 6. Grant Writing Resources

Course Name: MDCRC 6450- Grant Writing Course

Duration: one semester

Description: This course covers the entire preparation of an NIH grant, including aims and hypotheses, significance and innovation and research plan, bio sketches, and supporting appendices. Students will write a grant using the NIH format and critique classmates grants using the NIH CSR review templates.

Note: Students should ideally be in the process of writing a health-related research grant during the semester-long course.

Intended Audience: Researchers who are ready to write at program start, preparing a new or resubmitting a revised NIH K- or R-series proposal

Eligibility: Department Consent Required

Grant Writing Experience: Enrollment Requirements. Prerequisites: MDCRC 6000, 6010, and 6430.

Next session: Spring 2020. Please Sign up at their website to receive notifications


Course Name: Grant Writing Academy (GWA)

Duration: 2½-day program

Description:

The GWA provides a high faculty-to-participant ratio that facilitates development of productive and independent research scientists. The course fee covers all curriculum materials, two nights lodging at Deer Valley Resort, use of recreational facilities, evening socials and most meals. Spouses, partners and children are welcome to accompany the participant (but supplemental charges may be required to cover costs of families larger than four). If department, programmatic, or personal funds are unavailable to cover course costs, the participant and their Department Chair or Research Dean are encouraged to contact Research Education to discuss other potential course funding options.

The Research Education Grant Writing Academy (GWA) is a 2½ day intensive program which utilizes proven strategies and techniques to:

- Develop successful proposals for a variety of funding agencies
- Conceptualize clear and concise aims that are specific, measurable, and realistic
- Communicate research priorities with focus on significance and impact
- Build strategies for career development and long-term research plans
- Interpret program announcements and understand review criteria
GWA offerings are valuable and unique. Specific GWA features and benefits include:

- Individual mentoring sessions with an experienced and diverse team of senior faculty members, including key subject matter experts and funding agency representatives (as available)
- Group training activities designed to enhance writing and presentation skills, and to identify tools and resources essential to the preparation of a successful grant Application,
- Peer networking and collaboration activities designed to provide a broad scientific perspective and insight into the grant review process

Intended Audience:

- Hold faculty position at the level of assistant professor or higher or permission from GWA leadership
- Externally funded proposal, with planned submission
- Full 2 ½ days attendance is required

Next session: November 2019

More Information: For complete information and to register for the November 2019 program, please contact the Office of Research Education by phone (801-587-3958) or by e-mail (sam.ma@hsc.utah.edu).

Web page: https://education.research.utah.edu/grant-writing-academy-page-new-1.php

Course Name: NRMN P3

Duration: 2-day in person kickoff followed by 5 months of bi-weekly virtual meetings, concluding with a 1-day mock study section

Description: Structured, writing intensive, small group with built-in mock study section review

Intended Audience: Researchers who are ready to write at program start, preparing a new or resubmitting a revised NIH K- or R-series proposal

Eligibility: U.S. Citizenship or Permanent Residency

Grant Writing Experience: Moderate to advance

Experience/Level: Junior faculty or postdoctoral fellows with a faculty position secured and working on K- or R-series NIH proposal (new or revised)

Local Mentorship: Has a local mentor (or peer) to provide scientific review of proposal during its development (signed agreement required)

Next session: Please visit link below and sign up to receive notifications for next sessions

More Information: https://nrmnet.net/grantwriting-coaching-groups/programs-offered/
**Course Name:** NU MODEL

**Duration:** 2-day in-person kickoff followed by 3-4 months of virtual subgroup meetings scheduled as needed

**Description:** Real-time feedback, strong emphasis on rhetorical patterns that are common to many NIH-style proposals

**Intended Audience:** Researchers who are ready to write at program start, preparing new or resubmitting a revised NIH K-or R-series proposal; special groups for R01-A1 submissions are also available

**Eligibility:** U.S. Citizenship or Permanent Residency

**Grant Writing Experience:** Moderate

**Experience/Level:** Postdoctoral fellows and Junior faculty who are:

- Ready to write at program start and planning to submit a proposal with a 4-8 month submission window and
- Preparing new or resubmission of an NIH F32, K- or R-series proposal

**Next session:** Please visit link below and sign up to receive notifications for next sessions

**More Information:** [https://nrmnet.net/grantwriting-coaching-groups/programs-offered/](https://nrmnet.net/grantwriting-coaching-groups/programs-offered/)
Appendix 7. Responsible Conduct of Research

The Responsible Conduct of Research (RCR) Certificate acknowledges study of the ethical issues involved in research and is designed to promote RCR instruction in areas such as animal welfare, authorship, collaborative science, conflict of interest, data management, human subject protections, mentor / trainee responsibilities, peer review and research misconduct. For individuals receiving support from federal funding agencies, RCR instruction must be undertaken at least once during each career stage, and at a frequency of no less than once every four years.

To enroll in the RCR certificate, first enroll here. Then please enroll in each individual course following the links below.

CORE CLASS:

1. RATS Online / Introduction to the Responsible Conduct of Research (RCR)

ELECTIVE CLASSES:

2., 3., 4., & 5. Choose any live lecture classes ONLY from the following list:

- Case Studies in the Responsible Conduct of Research (RCR)
- Collaborative Research and the Roles of the Scientist in Society
- Getting Published: Responsible Authorship and Peer Review
- Grant-Writing Workshop: Community-Based Participatory Research
- Grant-Writing Workshop: Foundations and Charities
- Grant-Writing Workshop: The National Institutes of Health (NIH)
- Grant-Writing Workshop: The National Science Foundation (NSF)
- Introduction to Research Integrity
- Investigator Orientation: Clinical Research Workshop
- Laboratory Leadership and Staffing
- Mentoring Roles and Responsibilities
- Research Data Management and Sharing

Enrollment: The Responsible Conduct of Research (RCR) Certificate
Appendix 8. End-of-Research Block Report

Utah StARR End-of-Research Block Report

To be completed by Primary Scientific Mentor. Scholars will be allowed to see these reports. Confidential comments can be e-mailed directly to Program Director(s).

Utah StARR scholar’s name:
Research Block #_____
Research Block start date:
Research Block end date:

1. Please list major accomplishments during research block

2. What went well during this research block?

3. What would you change for the next research block?

4. What will be the frequency of your meetings in the clinical block (we suggest monthly)?
Appendix 9. Mentor’s Report on Scholar’s Progress

Utah StAAR Mentor’s Report on Scholar’s Progress

To be completed by **Primary Scientific Mentor**. Scholars will be allowed to see these reports. Confidential comments can be e-mailed directly to Program Director(s).

**STEP 1.**

Please complete:

**Scholar’s INFORMATION**

<table>
<thead>
<tr>
<th>Scholar Name and Degree(s):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation Period (Block 1, Block 2, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

**PRIMARY SCIENTIFIC MENTOR INFORMATION**

<table>
<thead>
<tr>
<th>Mentor Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Title:</td>
<td></td>
</tr>
<tr>
<td>Department/Division:</td>
<td></td>
</tr>
<tr>
<td>UID:</td>
<td></td>
</tr>
<tr>
<td>Email:</td>
<td></td>
</tr>
</tbody>
</table>

**STEP 2.**

**Please answer each question below related to your relationship with your scholar.**

1. How frequently did you meet with your scholar over the last year?

2. Were you satisfied with the frequency of these meetings? Y/N If not, why?

3. Did you review/discuss your scholar’s individual development plan (IDP)? Y/N If so, did you feel this discussion aided their research/career trajectory? If not, why?
4. What other resources did you refer your scholar on to? (this could include: other professionals, programs, courses, etc.)

5. Do you feel that your relationship with your scholar met your expectations? Y/N How so? If it didn’t meet your expectations, what did you feel was lacking?

6. What progress do you feel your scholar has made over the last year?

Additional comments about your mentor relationship with the scholar

STEP 3.
Provide a detailed statement, maximum 1 page, assessing the Utah StARR Scholar’s progress and performance for the past year, both in research and in terms of development into an independent investigator.
Appendix 10. End-of-Program Report

Utah StARR Scholar End-of-Program Report

The **End of Program Report** is an opportunity for you (scholar) to update your Individual Development Plan (IDP) and share progress-to-date. A copy of the information you submit will be shared with your Residency Director and with the Utah StARR Program Directors.

**End of Block Progress Report sections:**

1. Major Accomplishments during Utah StARR program
2. Mentoring Evaluation
3. Program’s General Evaluation
4. Narrative Progress Report
5. Updated IDP and new Goals
6. Mentor’s Report on Scholar’s Progress (Appendix 5)

**SCHOLAR INFORMATION**

Scholar’s Name:  
Unid #:  
Residency Program:  

ORCID Identifier*  
*Not Required*:

*An ORCID Id is the most useful identifier for us to track your publication and progress long term. If you would like to register for a unique ORCID please visit [www.orcid.org](http://www.orcid.org)*

**Part 1: Major accomplishments during Utah StARR program**

Please provide a list of major research accomplishments

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
<td>8.</td>
</tr>
<tr>
<td>9.</td>
<td>10.</td>
</tr>
</tbody>
</table>

**Part 2: Mentoring Evaluation**

Please answer the following questions regarding your relationship with your scientific mentor(s):

1. Do you feel that your relationships with your mentor(s) met your expectations? Y/N
2. In what ways do you feel these relationships met/did not met your expectations?
3. Do you feel that your mentors were helpful in assisting you to achieve your goals? Y/N
4. What do you feel was most helpful about the advice and assistance they gave you?
5. Is there anything within your relationship with your mentor(s) that you feel could be improved upon? Y/N
6. If so, what?

Part 3: Program’s General Evaluation
Please answer the following questions regarding your Utah StARR scholar experience so far:
1. How did Utah StARR Program contributed to your research accomplishment?
2. What can we do, as a program, to continue to help you prepare to be an independent researcher?

Part 4: Narrative Progress Report (maximum 500 word)
Please provide an update on your research project and associated results/accomplishments; and how your participation in the Utah StARR Program has contributed to your success. Please attach your Progress Report as part of this report.

Part 5: Updated Individual Development Plan
Update the Individual Development Plan to reflect your progress thus far. Attach your updated IDP as a part of this report.

Part 6: Mentor's Report on Scholar’s Progress (please use Appendix 5)
Please attach your primary scientific mentor’s progress report as part of this report.