University of Washington School of Nursing PhD in Nursing Science Individual Development Plan

Student:\_\_Frankie Armstrong Primary Mentor:\_\_\_\_Linus Van Pelt\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Other Mentoring Team Members:\_\_Sally Brown \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Initial Date of IDP Development:\_\_\_September 202X\_\_ Last Date IDP Reviewed: \_\_Oct 202X\_\_\_ Date of Next Scheduled IDP Review: \_June 202Y\_\_\_

**Part 1. Skills and Knowledge Self-Assessment** (summarize from myIDP at <http://myidp.sciencecareers.org/>; reassess at least yearly)

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| --- | --- | --- |
| Component | Trainee Comments/Date | Mentor Comments/Date |
| Scientific Knowledge | Deepen knowledge of specific research area |  |
| Research Skills | Gain fundamental working knowledge of statistical analysis and navigating peer review process |  |
| Communication Skills | Be more efficient in seeking advice from advisors/mentors; writing grant proposals |  |
| Professionalism | Skills are well developed overall except contributing to discipline, this could hold for now |  |
| Management and Leadership Skills | Would like to learn to be more facile with providing constructive feedback |  |
| Responsible Conduct of Research | Build skills with responsible conduct of human research, and identifying research misconduct |  |
| Career Planning | Goal for year is to build professional network within research area |  |

**Part 2A. PhD-Program Milestones**

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| --- | --- | --- | --- |
| Program Milestone/Expectation | Trainee Comments/Date | Mentor Comments/Date | Date Achieved |
| Preliminary Examination Completed | Planned June 202Y 10/202X | Concur, LVP. 10/2X |  |
| PhD Committee Formation |  |  |  |
| Program of Study Approved |  |  |  |
| Coursework Completed |  |  |  |
| General Exam Completed |  |  |  |
| Dissertation Proposal Approved |  |  |  |
| Final Dissertation Defense |  |  |  |

**Part 2B. PhD Program Specific Domains and Competencies of Focus (see Appendix)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PhD Program Domain | PhD Competency(ies) | Trainee Comments/Date | Mentor Comments/Date | Goal achieved/Date |
| 1. CRITIQUE OF THEORIES AND LITERATURE | 2.3, 2.5, 2.6, 2.7 | Plan to work on state of the science review focused on microbiome-host interactions in ICU patients with ARDS and relation to outcomes; Oct 202X | Independent study planned Winter 202Y. |  |
| 1. DEVELOPMENT OF RESEARCH QUESTIONS THAT ADVANCE NURSING SCIENCE | 1.1-1.3 | Narrow down research question by Spring quarter 202Y based on state of science review; Oct 202X |  |  |
| 3. DESIGNING RESEARCH TO ADVANCE NURSING SCIENCE AND GRANT AND PROPOSAL WRITING | 3.2, 3.3, 3.6, 3.11, 8.1-8.5 | Plan to submit F31 to NINR for August 202Y cycle. | Dependent upon narrowing research question by Winter quarter; meeting with ONR planned for December 202X. |  |

**Part 3. Individual Student Goals and Strategic Plan to Achieve (Distinct to the individual trainee, developed from Self-Assessment)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Goal | Strategies to Achieve Goal with responsible individual | Timeline to Complete | How will know achieved goal? | Progress Review/Date |
| Goal 1: By end Fall quarter, will identify and make formal contact with 2 internal and 1 external researcher for networking in research area. | Reading in field; Attendance at Grand Rounds; Dr. Van Pelt to make connections. | December 20 | Contacts are made, and identified next steps for engagement |  |
| Goal 2: By end of Spring quarter, will have integrated current state of knowledge of microbiome-host interaction in ARDS in order to identify gaps in knowledge. | Directed readings with Dr. Van Pelt as IS in Winter quarter; Drafting state of science paper. | June 15 | Research question is identified/narrowed; State of science paper is submitted. |  |
| Goal 3: Starting January 1, block 8-10 hours each week to work on F31 draft in order to complete and submit full draft of NRSA to agency by Summer cycle deadline. | Meet with ONR (FA and LVP); Set timeline (FA); 1:1 meetings with Dr. Van Pelt biweekly starting January (FA to send agenda and materials in advance for LVP review/feedback); Modeling party in April on Specific Aims (FA to contact ONR in End Feb); Modeling party of full grant June. | August 1 | F31 is submitted to agency |  |
| Goal 4: |  |  |  |  |

**Part 4: Plan for Responsible Conduct of Research**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TOPIC | Specific Content Planned/Covered | Activity and Format | Date of Activity | Comments |
| 1. conflict of interest |  | Course work (NURS 540; NURS 587); individual meetings with faculty; Van Pelt Team Mtgs |  |  |
| 1. policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices |  | Same as above |  |  |
| 1. mentor/mentee responsibilities and relationships |  | Same as above |  |  |
| 1. collaborative research including collaborations with industry |  | Same as above |  |  |
| 1. peer review | Ethics of peer review/responsibilities for publications. | Contribute to peer review of paper in Van Pelt Team/mentored ; NURS 540 |  |  |
| 1. data acquisition and laboratory tools; management, sharing and ownership |  | BRI summer session; Van Pelt research team meetings |  |  |
| 1. research misconduct and policies for handling misconduct |  | Course work; individual meetings with faculty; Van Pelt Team Mtgs |  |  |
| 1. responsible authorship and publication |  | Same as above |  |  |
| 1. the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and environmental and societal impacts of scientific research |  | NURS 587; BRI; Van Pelt Meetings |  |  |
| Other: |  |  |  |  |

**Part 5: Outcomes/Products Planned**

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| --- | --- | --- |
| Outcomes/Products Planned and Target | Planned Date for Completion | Progress Review |
| Grant(s) F31 to NINR | August 202Y |  |
| Manuscript(s) 1) State of science review as first author; 2) contribute to Dr. Van Pelt paper on microbiome and ARDS | 1. Spring quarter 202Y; 2) Jan 202Y |  |
| Abstract(s) submit to SCCM meeting | August 202Y. |  |
| Presentation(s) presentation to Van Pelt lab Winter quarter | Feb 202Y. |  |
| Other Modeling party | June 202Y |  |

**Part 6: Signatures/Date Indicating Review**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Annual Review 2020-21 |
| Trainee | F. Armstrong 9/30/2020 |  |  |  |
| Primary Mentor | L. Van Pelt 10/15/2020 |  |  |  |
| PhDCC/Graduate Program Director  Review includes comments regarding plan and progress |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Annual Review 2021-22 |
| Trainee |  |  |  |  |
| Primary Mentor |  |  |  |  |
| PhDCC/Graduate Program Director  Review includes comments regarding plan and progress |  |  |  |  |

**Appendix. Domains and Core Competencies for PhD in Nursing Science** **Graduates**

1. **DEVELOPMENT OF RESEARCH QUESTIONS THAT ADVANCE NURSING SCIENCE**
2. Distinguish the epistemological and ontological basis of diverse forms of inquiry for generating knowledge in nursing.
3. Identify observations or problems that lead to researchable questions
4. Evaluate strengths and limitations of major approaches to knowledge development as applied to a particular concern/phenomenon in nursing.
5. Formulate and distinguish among a purpose statement, research question, hypothesis, and specific aim for addressing a problem with research
6. Prepare the background and significance sections of a research proposal that build a compelling case for conducting a study, including how current research priorities are addressed
7. **CRITIQUE OF THEORIES AND LITERATURE** 
   1. Critique theories that serve as frameworks for nursing inquiry, education, practice, or [health-related] systems.
   2. Differentiate between types of literature review (systematic, scoping, targeted) for summarizing knowledge about a particular problem
   3. Conduct a comprehensive search of the global literature that addresses a clinical problem or research question
   4. Use established rating systems for evaluating level of evidence and methodological quality as the basis for critiquing and interpreting results of published studies
   5. Identify potential sources of bias and variation in published studies
   6. Synthesize evidence from the literature on a clinical problem
   7. Identify gaps in knowledge within a problem about which research is needed
   8. Apply concept analysis techniques related to a phenomenon of interest to nursing.
   9. Develop a conceptual framework or model to represent the concepts and relationships involved in a clinical problem that synthesizes relevant literature globally
8. **DESIGNING RESEARCH TO ADVANCE NURSING SCIENCE**
9. Describe the basic principles and practical importance of methodological perspectives
10. Describe how different research questions guide the use of different study designs
11. Assess the strengths and weaknesses of possible study designs for a given research question
12. Describe the different phases of a clinical trial
13. Identify where a planned or published study is situated in the phases of translational research
14. Identify the difference between a research design statement and study methods
15. Apply theoretical/conceptual frameworks to guide hypothesis testing and intervention development
16. Identify a target population and setting for a research project
17. Design an analysis plan that addresses the research questions, hypotheses, and study aims
18. Develop a research study protocol
19. Determine resources needed to implement a study protocol
20. **RESEARCH ETHICS**
21. Describe the fundamental principles of the protection of human subjects, the main authoritative bodies, key human rights codes, and scope of enforcement
22. Explain the purpose and overall policies to ensure ethical use, care, and safety of animals
23. Explain the ways in which the principles of research ethics are integrated into the design, conduct, oversight, and dissemination of research
24. Describe the essential elements of voluntary informed consent
25. Critique a proposal for risks to human subjects and protections of vulnerable populations
26. Prepare an application for IRB approval
27. Understand the significance of and considerations for data and safety monitoring plans
28. Explain the procedures for reporting and investigating misconduct in research
29. Explain conflict of interest management in research
30. Outline criteria for determination of authorship
31. Describe the role of peer review in funding and publication
32. **MEASUREMENT AND SOURCES OF ERROR**
33. Identify and describe measures that operationalize stated study concepts
34. Identify how outcome and process measures correspond with conceptual models
35. Evaluate and describe the reliability and validity of study measures
36. Describe the basic principles and practical importance of variation and error
37. Assess data sources and data quality to answer specific research questions
38. Assess threats to internal and external validity in any planned or completed research study
39. Implement data quality assurance procedures for different study designs and analyses
40. Describe strategies for establishing trustworthiness and rigor in qualitative studies
41. **ANALYTICAL APPROACHES**
42. Scrutinize the assumptions and corresponding limitations behind different research methods
43. Explain the uses, importance, and limitations of intent-to-treat analyses and early stopping rules in clinical trials
44. Describe the uses of meta-analytic methods
45. Describe approaches and steps for analyzing qualitative data
46. Describe the uses of and integration/triangulation of mixed-methods approaches
47. Describe use of statistical modeling techniques for answering research questions
48. Generate simple descriptive and inferential statistics that fit the study design chosen and sources/levels of measurement to answer research questions
49. Interpret computer output containing the results of statistical procedures and graphics
50. Identify approaches for minimizing and/or addressing outliers, group equivalence, analytic assumptions about distribution, and missing data in analyses
51. Compute sample size, power, and precision
52. Collaborate with statisticians in the design, conduct, and analyses of research
53. **SECONDARY DATA, BIG DATA, AND INFORMATICS**
54. Describe the effects of technology on medical research, education, and patient care
55. Describe the essential functions of the electronic health record and the barriers to its use in research
56. Describe the fundamental precepts, methods/measurement, and analytic approaches for omics research in nursing science
57. Discuss the role of bioinformatics in the study design and analyses of high dimensional data in areas, such as genotypic and phenotypic genomics
58. Identify considerations for consolidating and harmonizing data sets
59. Develop an approach to use of secondary, administrative, or electronic health records, including issues and best practices for working with received data
60. Collaborate with informatics specialists in the design, development, and implementation of research projects
61. **GRANT AND PROPOSAL WRITING**
62. Describe the strategic priorities of and differences between relevant funding agencies and organizations at the local to international levels
63. Understand the elements involved in building a cohesive and compelling case within a research funding proposal
64. Develop a NIH biosketch for a research study
65. Develop a budget and budget justification for conducting a small/pilot research study
66. Prepare an extramural grant proposal
67. Participate in peer review and critique of research proposals
68. **SCIENTIFIC COMMUNICATION**
69. Identify established guidelines (e.g., CONSORT, STROBE, PRISMA) for reporting on research in scientific publications
70. Demonstrate the ability to communicate an effective research argument and to give and receive feedback
71. Develop tables and figures to depict data/analyses and communicate scientific findings
72. Write summaries of scientific information for use in the development of health care policy
73. Communicate research findings to different groups of individuals, including colleagues, students, the lay public, policy makers, and the media
74. Develop and submit an abstract for presentation at a scientific conference
75. Present a scholarly report of a research study in manuscript and oral presentation formats
76. **DIVERSITY AND EQUITY**
77. Describe the relevance of cultural and population diversity in research design
78. Describe cultural and social variation in standards of research integrity
79. Identify NIH requirements regarding data collection about gender, race, ethnicity, and sexual orientation
80. Describe the role of implicit bias in health disparities and methods for enhancing health equity
81. Recognize the demographic, geographic, and ethnographic features within communities and populations when designing a research study locally and globally
82. Critique studies for evidence of health disparities, such as disproportional health effects on select populations (e.g., gender, age, ethnicity, race)
83. Appraise the role of community engagement as a strategy for identifying community health issues, translating health research to communities, and reducing health disparities
84. **CROSS-DISCIPLINARY TEAMWORK**
85. Describe how to build a collaborative, cross-disciplinary team that aligns with the objectives of the research
86. Identify strategies for collaboration and management in team science
87. Advocate for multiple points of view in research
88. Clarify terminology/language differences across disciplines
89. Collaborate with a multidisciplinary team in the conduct of research
90. Demonstrate group facilitation and decision-making skills
91. **LEADERSHIP AND FUTURE ROLES**
92. Understand roles and responsibilities as a mentor and mentee
93. Understand the elements of a cohesive program of research
94. Identify attributes of leaders
95. Build a network of scholarly support and mentorship
96. Demonstrate an understanding of career development strategies and role transitions in the support of post-graduation plans
97. Develop leadership and team management skills that foster innovation and creativity
98. Apply principles of adult learning and competency-based instruction to educational activities