



National Institute of
General Medical Sciences



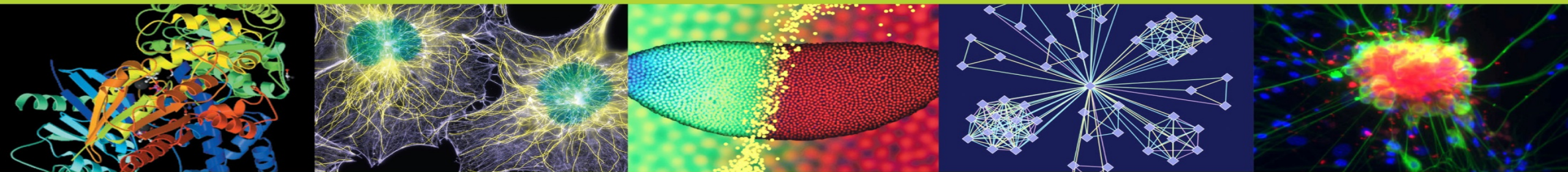
Overview of NIGMS Training, Workforce Development and Diversity Programs

Kenneth Gibbs, Ph.D.

Director, Postdoctoral Research Associate Training (PRAT) Program
Program Director

Division of Training, Workforce Development, and Diversity

Division of Genetics, and Molecular, Cellular, and Developmental Biology



Goal

- Provide an overview of and answer questions about NIGMS Training, Workforce Development and Diversity Enhancing Programs
 - Institutional programs
 - Supplements to existing awards
 - Individual opportunities (for your trainees)
- The Division of Training, Workforce Development, and Diversity (TWD) supports programs that foster [research training and the development of a strong and diverse biomedical research workforce.](#)

NIGMS

The National Institute of General Medical Sciences (NIGMS) supports basic research that increases our understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment, and prevention. NIGMS-funded scientists investigate how living systems work at a range of levels from molecules and cells to tissues and organs, in research organisms, humans, and populations.

Additionally, to ensure the vitality and continued productivity of the research enterprise, NIGMS provides leadership in training the next generation of scientists, in enhancing the diversity of the scientific workforce, and in developing research capacity throughout the country.

Division of Biophysics, Biomedical Technology, and Computational Biosciences

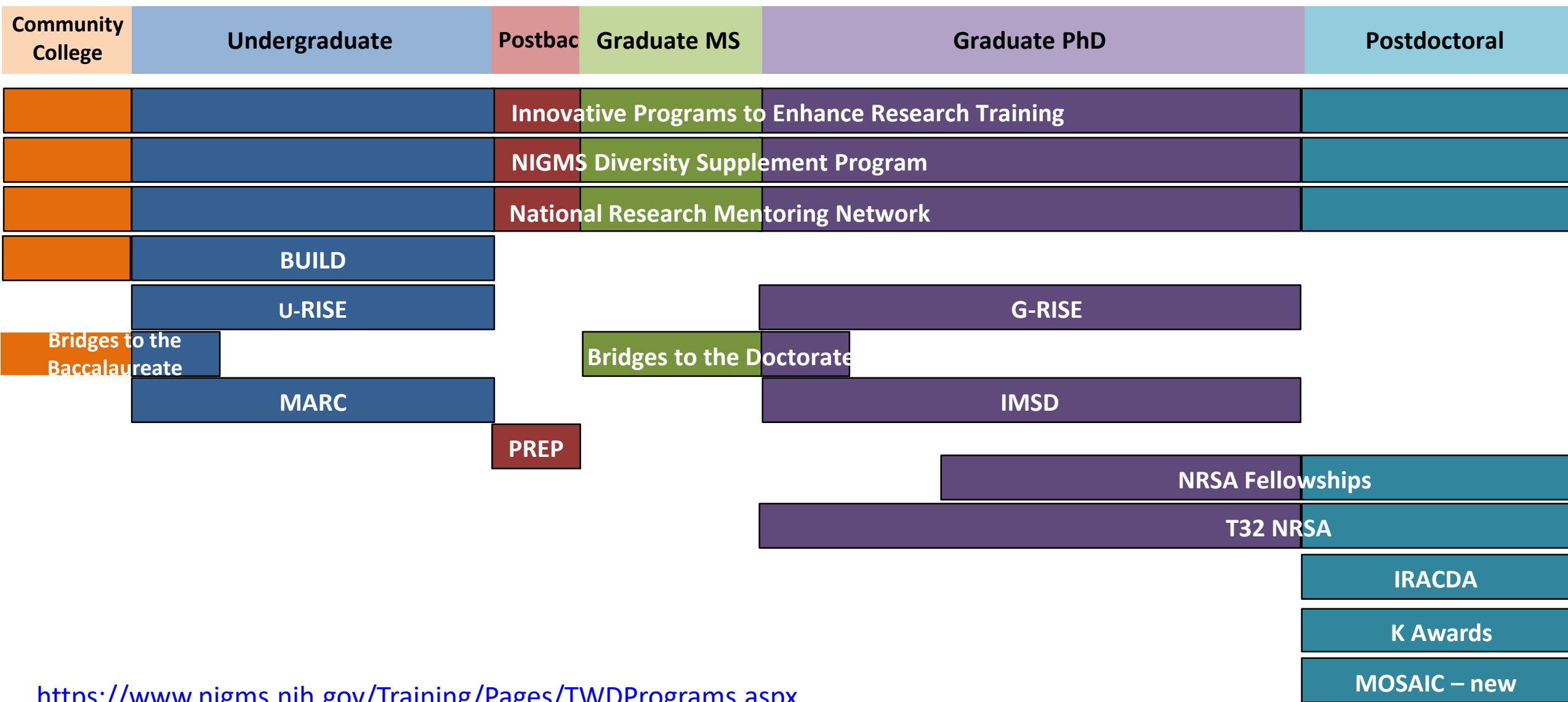
Division of Genetics and Molecular, Cellular, and Developmental Biology

Division of Pharmacology, Physiology, and Biological Chemistry

Division for Research Capacity Building

Division of Training, Workforce Development, and Diversity

TWD Administered Programs



<https://www.nigms.nih.gov/Training/Pages/TWDPrograms.aspx>

NIGMS Training Programs - Overarching Themes

- **Trainee skills development** - using evidence-informed approaches to provide technical, operational, and professional skills
- **Training Specific Aims** - establishing obtainable and measurable training objectives
- **Rigor & transparency, responsible & safe conduct of research** – implementing throughout the training experience
- **Diversity & inclusion** - establishing changes at all levels of the training environment
- **Mentor training and oversight of trainee/mentor matches** – providing training and oversight throughout the training experience
- **Career preparedness** - providing knowledge of and skills to transition into the range of careers in the biomedical research workforce
- **Strong institutional support for research training** – documenting support through a letter signed by an institutional official
- **Evaluation** – collecting and disseminating data on the success/failure of educational aims; making career outcomes publicly available



Sample language from FOAs

- **Programmatic Approach:** “Each program should provide high-quality research education experiences that equip participants with the technical (e.g., appropriate methods, technologies, and **quantitative/computational approaches**), operational (e.g., independent knowledge acquisition, rigorous experimental design, and interpretation of data) and professional (e.g., management, leadership, communication, and teamwork) skills required for careers in the biomedical research workforce. Funded programs are expected to promote inclusive research environments (i.e., institutional and departmental environments where researchers from all backgrounds are and feel integrated into and supported by the biomedical research community)”

NIGMS Basic Biomedical Predoctoral T32 Program Areas

- Behavioral-Biomedical Sciences Interface
- Bioinformatics and Computational Biology
- Biostatistics
- Biotechnology
- Cellular, Biochemical, and Molecular Sciences
- Chemistry-Biology Interface
- Genetics
- Molecular Biophysics
- Molecular Medicine
- Pharmacological Sciences
- Systems and Integrative Biology
- Transdisciplinary Basic Biomedical Sciences - new

One area per institution, normally defined by a DUNS or Institution Profile (IPF) number

Quantitatively Focused T32 Training Areas

Biostatistics

“Integrates biostatistical theory and evolving methodologies with basic biomedical research including, but not limited to, bioinformatics, genetics, molecular biology, cellular processes and physiology, as well as epidemiological, clinical and behavioral studies.”



Dr. Kenneth Gibbs

Computational Biology, Bioinformatics, and Biomedical Data Science

“Programs should train students in the fundamentals and applications of computational and information sciences to gain insights and develop new strategies to solve problems relevant to basic biomedical research. Of particular interest are multi-disciplinary programs providing the skills to address biomedical research questions by utilizing large data sets and multiscale approaches.”



Dr. Veerasamy
(Ravi)
Ravichandran



Dr. Haluk Resat

Training Modules to Enhance the Rigor, Reproducibility & Responsible Conduct of Biomedical Data Science Research (R25)

- **Curriculum Development:** Specifically, exportable training modules designed to enhance the rigor, reproducibility, and responsible conduct of biomedical and behavioral data science research, targeted to trainees and researchers at any career level. Examples
 - Scientific principles of rigorous and reproducible data science
 - Good practices in scientific rigor and reproducible data science
 - Good practices in the responsible conduct of data science research
- Participating ICs: NIGMS, NIDCR, NIBIB, NIAID, NLM, NCCIH
- Applications due June 19, 2020



Dr. Haluk Resat

Innovative Programs to Enhance Research Training (IPERT) (R25)

- Supports creative and innovative research educational activities designed to complement and/or enhance the training of a workforce to meet the nation's biomedical research needs.
 - **Courses for skills development:** For example, support for short courses designed to develop technical, operational and/or professional skills necessary to conduct rigorous and reproducible research, and to transition successfully into careers in the biomedical research workforce.
 - **Mentoring:** For example, activities designed to provide career information, advice, and support to research-oriented undergraduates, graduate students, postdoctoral fellows, or independent faculty in biomedical fields
- Next application due date October 15, 2020



Dr. Mike Sesma



Dr. Desiree Salazar



Dr. Edgardo Falcon Morales

Supplements

Research Supplements to Promote Diversity in Health-Related Research

- This program employs the research project grant as the platform for intensive mentored research experiences within the scope of the grant during the continuum from high school to the postdoctoral level. The goal is to increase the nation's pool of students from underrepresented groups by preparing them to continue their training in biomedical research.

Undergraduate

Postbac

Graduate MS

Graduate PhD

Postdoctoral



Dr. Desiree Salazar

Supplements Available to Current NIGMS TWD Grants

- Enhance laboratory safety curriculum and a culture of safety in biomedical research training environments ([NOT-GM-20-016](#))
- Promote safe and inclusive biomedical research training environments ([NOT-GM-20-018](#))
- Enhance undergraduate biomedical research training ([NOT-GM-20-019](#))
(Undergrad Programs: Bridges to Baccalaureate, MARC, RISE, IMSD)
- Enhance program evaluation capacity ([NOT-GM-20-020](#))
- Applications due April 15, 2020

Supplements Available to Current NIGMS Research Grants

- Summer research experiences for undergraduates ([NOT-GM-20-015](#))
- We wish to support students at any stage of their undergraduate career. Students may be U.S. or non-U.S. citizens. We encourage principal investigators to select students who otherwise would not have access to research experiences to participate in this program. Only one request per principal investigator will be considered.
- Applications due April 15, 2020
- **Contact the Program Officer of your NIGMS R01, R35 or R37 award**

Opportunities for Trainees

Opportunities to Pursue Your Own Funding

Predoctoral Individual Fellowship

F31 (Ph.D.) – Drs. Anissa Brown and Patrick Brown



F30 (MD/PhD) – Dr. Donna Krasnewich



Postdoctoral Individual Fellowship

F32 – Dr. Mike Sesma

Provides up to three years of support for mentored postdoctoral training

Pathway to Independence Award

K99/R00 – Dr. Mike Sesma



- 2 years of mentored postdoctoral research (K99)
- 3 years of independent funding (R00)

MOSAIC Program Goal

- The MOSAIC K99/R00 program is designed to facilitate a timely transition of *promising* postdoctoral researchers from diverse backgrounds (e.g., see the [Notice of NIH's of Interest in Diversity](#)) from their mentored, postdoctoral research positions to independent, tenure-track or equivalent faculty positions at research-intensive institutions.
- The overarching goal of this program is to enhance the diversity of independent investigators conducting research within the NIH mission.

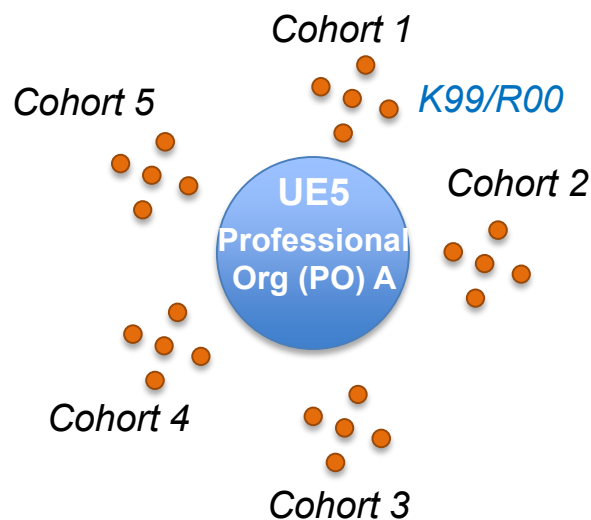


Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC)

Postdoctoral Career Transition Award to Promote Diversity (K99/R00)

NIGMS Institutionally Focused Research Education Cooperative Agreement to Promote Diversity (UE5)

- Step 1: NIH Award UE5's to neutral organization such as scientific societies (Summer 2020)
- Step 2: NIH Administers Competition for K99/R00 to Promote Diversity (Feb, June, October – Annually)
- Step 3: Cohorts of MOSAIC scholars organized by scientific areas within the mission of participating ICs



- **K99**

- NIGMS intends to fund 15 MOSAIC K99/R00 scholars per year (~75 scholars by year five, steady state)
- Other Participating ICs: NIBIB, NINR, NIMHD, NHGRI, NIA, NLM, NIMH, NIDA, NHLBI, NIAAA, NIEHS, NIDCD
- *Must be a US Citizen or Permanent Resident*

- **UE5**

- NIGMS intends to fund three UE5s (MH, HL, LM also participating)
- UE5s provide MOSAIC K99/R00 scholars additional mentorship, networking, career development, and institutional responsibility



Dr. Kenneth Gibbs

Postdoctoral Research Associate Training (PRAT) Program



- Competitive three-year postdoctoral fellowship program that provides high quality research training in the basic biomedical sciences in NIH [intramural research laboratories](#), and prepares fellows for leadership positions in biomedical careers
- Provides stipend, health insurance, and travel/training allowance
- Structured postdoctoral program with defined training components



Dr. Kenneth Gibbs

Please encourage graduate students who want to postdoc at NIH to apply!

<https://www.nigms.nih.gov/training/pages/prat.aspx>

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Contact: kenneth.gibbs@nih.gov