

## **Request For Applications: Data Scholars Program**

The Translational Research Institute (TRI) at UAMS is pleased to invite applications for the Data Scholars Program. The Program will provide support for UAMS, VA, and ACH faculty with a terminal degree (MD, PhD, PharmD, DNP, DrPH, DO, etc.) in learning and applying the principles and methods of ***data analytics and data sciences*** — *generating and applying knowledge from data to inform clinical practice and policy.*

### **Program Summary**

The Data Scholars Program is a one-year program that combines training in data analytics with mentored support of a data-oriented project in the faculty member's clinical area. Data Scholars will enroll in formal course work for the first nine months of the program while concurrently developing their research project and then have three months of protected time over the summer to complete their research. Data Scholars will receive:

- 20% salary support (up to NIH annual salary cap: \$192,300 + fringe)
  - Scholars are required to dedicate 20% effort to the program. The sponsoring department or college may be required to supplement support to meet the 20% salary (per NIH salary cap requirements). Salary supplementation may be from a variety of sources except federal funds.
- Tuition support up to a maximum of \$2,500/semester and \$5,000/year for customized, didactic training. Scholars may enroll in course work as degree seeking or non-degree seeking students. Data scholars are expected to successfully complete at least 6 credit hours of data science or data analytics courses in the following programs (see Appendix 1 for course listing):
  - Graduate Healthcare Analytics certificate or MS program offered by the College of Public Health (<https://publichealth.uams.edu/academics/certificates/healthcare-analytics/>)
  - Graduate coursework in a data analytics related course available in the following graduate programs:
    - College of Pharmacy – Pharmaceutical Evaluation and Policy: (PEP) MS/PhD
    - College of Public Health – Health Systems and Services Research: PhD
    - College of Public Health – Health Care Analytics: Certificate, MS
    - College of Medicine – Biomedical Informatics: Certificate, MS, PhD
  - Graduate coursework offered at other University of Arkansas System Schools
    - University of Arkansas Fayetteville College of Engineering
    - University of Arkansas at Little Rock Department of Computer Science

- Close mentoring from UAMS TRI faculty and staff in developing a research project in the Data Scholar’s clinical area of interest using existing UAMS data resources (e.g. UAMS Enterprise Data Warehouse, LifeLink, Arkansas All Payers Claims Data, Healthcare Cost and Utilization Project) or publicly available data. A complete listing of data resources can be found at: <https://medicine.uams.edu/dbmi/databases/>
- Eligibility
- Applicants must;
  - Hold a terminal degree as described above
  - Have at least a 50% appointment at UAMS, ACH, or CAVHS (preference given to faculty with 100% appointments)
  - Be able to devote 20% effort for 12 months starting **August 15, 2022**, documented by the applicants Supervisor
- It is recommended that the applicant propose to use:
  - Existing TRI data resources or data resources already available to UAMS/ACH faculty. Funding to acquire new data will not be provided.
  - A multidisciplinary, team science approach to accomplish the research and training goals

#### Important Dates

- Informational Sessions: [Register here](#)
  - January 21, 2022, 12:00 PM – 1:00 PM
  - January 24, 2022, 4:00 PM – 5:00 PM
- March 1, 2022: Applications due
- March 18, 2022: Awardees Notified (Approximate)
- August 15, 2022: Data Scholars Program Begins

#### Research Plan

Applicants will submit a **three-page** (maximum) research plan covering the following topics: 1) research aim(s) to be addressed using data analytics, 2) research strategy, including potential data resources that will be utilized and methods to address the research aims and 3) training goals, including candidate’s background, interest, and experience in data analytics/sciences or experience that lead to interest in this field and proposed coursework to be completed.

- **Research Aims:** Describe the specific research aims and the rationale for exploring those aims. Applicants may explore topics across all clinical areas and may propose the development of new data tools that can be used to improve care (clinical decision support, predictive analytics, etc), propose comparative effectiveness research assessing the benefits and harms of preventive, diagnostic, therapeutic, and palliative care; population

health; health policy analyses; epidemiologic or real world evidence studies addressing focused research question(s) using observational data; or elucidate predicted clinically relevant biological pathways using computational systems biology approaches (genomics, transcriptomics, proteomics, and metabolomics). The applicant should describe what is known about the research area, including theories or conceptual models guiding the research if applicable, and what unmet needs the research plan proposes to address.

- **Research strategy:** Provide a brief description of the research approach the applicant will take to address research aims. Central to the research strategy is a description of the data resources that will be utilized and the analytic approaches that will be undertaken. The research strategy should outline study subjects, study measures and analytic approach.
- **Training goals:** Describe the knowledge and research skills to be acquired relevant to the applicant's career goals. This section should describe the plan of study over the year, current and proposed professional responsibilities, prior training and research efforts and how those relate to the training goals. This section should also articulate plans for future grants, publications, and other ways in which they will continue to apply what they learned after the program ends. Applicants may identify a mentoring team consisting of one primary mentor and at least one secondary mentor as part of the application. The mentor and candidate is responsible for the planning, directing, monitoring, and executing the proposed program. If mentors are identified, they must provide a letter of support specifically describing their role in mentoring the applicant. If a mentor is not identified, the data scholars program will assist the candidate in selecting a mentor based on their background and research goals.

## Application Checklist

Please bundle your application into one PDF with the documents in the order listed below.

1. Research Plan (as described above, 3-page maximum)
2. NIH Biosketch (format and instructions can be found at <https://grants.nih.gov/grants/forms/biosketch.htm>)
3. Letter of support from relevant supervisor (e.g. department chair, ICE and/or ICHPP leadership) detailing support for the candidate and the proposed project. Letters should include salary information for applicant, and an explicit statement of support to devote 20% effort to the program.
4. Letter of Support from Mentor(s) – *optional*

## Submission Information and Inquiries

Completed applications should be [submitted here](#) as a single pdf document by March 1, 2022 at 6:00 PM.

Inquiries regarding the application procedures can be directed to Chaz England ([cengland@uams.edu](mailto:cengland@uams.edu)) and inquiries regarding the scope of the Data Scholars program can be directed to Bradley Martin, PharmD, PhD ([bmartin@uams.edu](mailto:bmartin@uams.edu)).

## Appendix 1 – Suggested Data Analytics Courses offered at UAMS

### More General or Applied Courses for Data Scholars

- \*HPMT 5212 Healthcare Information Systems—Fall
- \*HPMT 5214 Decision Analytics in Healthcare—Spring
- \*HPMT 5334 Data Visualization for Healthcare Analytics—Spring
- \*HPMT 5335 Data Mining in Healthcare—Fall
- HPMT 5211 Healthcare Data Management using SQL—Fall

### ***\* Didactic Curriculum for Graduate Certificate in Healthcare Analytics***

PSGP 5118 Applied Research Methods using Retrospective Data—*Spring of even years*

- BIOS 5212 Biostatistics II Advanced Linear Models—Spring
- BIOS 5223 Biostatistics III: Multivariate Analysis & Linear Models—Fall
- BIOS 5213 Biostatistics Computing with SAS I—Fall
- BIOS 5111 Biostatistics Computing with R I (1 hour) —Fall
- BIOS 5200 Biostatistics Computing with R II (1 hour)—Spring
- BMIG 5001 Information Modelling: From Data to Knowledge—Fall
- BMIG 5003 Computational Methods in Biomedical Informatics—Fall
- BMIG 6014 Natural Language Processing in Biomedical Informatics—Fall
- BMIG 6201 Machine Learning—Spring

Python Programming Bootcamp (Non Credit: contact Jonathan Bona)—Summer

### More Specialized or Advanced Courses for Data Scholars

- BIOS 5313 Nonparametric Methods—Fall
- BIOS 5315 Logistic Regression and Survival Analysis—Fall
- BIOS 5317 Biostatistics Computing with SAS II—Fall
- BIOS 5324 Analyzing Health Surveys—Fall
- BIOS 6213 Application of Microcomputers to Data Management & Analysis—Fall
- BIOS 6214 Categorical Data Analysis—Fall
  
- BMIG 5002 Biomedicine for Informaticists—Fall
- BMIG 5003 Computational Methods in Biomedical Informatics—Fall
- BMIG 5013 Health Information Systems—Fall
- BMIG 5014 Anatomy for Imaging (1 credit)—Spring
- BMIG 5015 Introduction to Biological Network Analysis—Fall
- BMIG 5016 Clinical and Translational Research—Fall
- BMIG 5017 Clinical Data Standards (1 credit)—Fall
- BMIG 5021 Medical Decision-Making (1 credit)—Fall
- BMIG 5102 Foundations of Biomedical Informatics - Clinical Information (2 credits)—Spring
- BMIG 5103 Foundations of Biomedical Informatics: Public Health Information: (2 credits)—Spring
- BMIG 5211 User Interface Design and Data Visualizations (1 credit)—Fall

BMIG 5101 Foundations of Biomedical Informatics- Sequences as Biological Information (2 credits)—Spring  
BMIG 5113 Clinical Imaging Informatics—Fall  
BMIG 5112 Introduction to Human Computer Interaction—Fall  
BMIG 5114 Bioconductor for Genomic Scale Data—Fall  
BMIG 5115 Healthcare in the US—Fall  
BMIG 5190 Biomedical Informatics Research and Application Seminar—Fall  
BMIG 5212 Introduction to Bioinformatics for Cancer Genomics—Fall  
BMIG 5210 Genomics and Metagenomics—Fall  
BMIG 6010 Information Systems in Clinical Research—Fall  
BMIG 6011 Clinical Trial Data Management—Fall  
BMIG 6012 Database Systems and Data Warehousing—Fall  
BMIG 6013 Healthcare Informatics of Quality and Patient Safety—Fall  
BMIG 6050 Research Design in Biomedical Informatics—Spring  
BMIG 6101 Fundamentals of Managing Data Research—Fall  
BMIG 6110 Clinical Decision Support—Spring  
BMIG 6111 Comparative Microbial Genomics—Spring  
BMIG 6112 Clinical Research Informatics Synthesis—Fall  
BMIG 6202 Foundations of the Human Microbiome—Spring  
BMIG 6203 Genomic Surveillance of Antimicrobial Resistance—Spring  
BMIG 6210 Research Imaging Informatics—Fall  
BMIG 6220 Neuroimaging Informatics and Connectomics—Fall  
BMIG 6224 Teaching, Learning & Instructional Practice—Spring

ENVH 5447 Geographic Information Systems for Health Professionals—Fall

OEHM 5107 Design and Management of Clinical Trials

PSGP 5122 Applied Health Econometrics—*Fall of even years*

**Notes:**

***Most courses listed are 3 or 4 credit hours unless otherwise noted***

***We have identified the semesters in which the courses are typically offered to facilitate planning, however, these are subject to change based on the academic units offering the courses.***