Many investigators have benefited from this process. Methodological education in the collaborative support of clinical and translational research in arthritis and musculoskeletal disease (MSD) at the local, regional, national, and international level.

**Mission**

Develop and provide state of the art methodology and methodological education in the collaborative support of clinical and translational research in arthritis and musculoskeletal disease (MSD) at the local, regional, national, and international level.

**Aim 1:** Support the design, data collection, management, ad analytic efforts of the MCRC projects.

**Aim 2:** Original research in methodology that are applicable to clinical and translational research in arthritis and MSD.

**Aim 3:** Develop new investigators in the area of arthritis and MSD research.

**Aim 4:** Provide methodology seminars, workshops, and mini-courses to introduce the newest methodological approaches to the MCRC research base.

**Educational Activities**

1. **New investigator development.** New investigators can present their grant ideas to the methodology core members and other relevant people to help their grant development. Many investigators have benefited from this process.

2. **Workshops and mini courses.** Each year, MCRC methodology core organizes multiple educational workshops or mini courses focused on different analytical areas. No prior knowledge is required to attend these events.

**Contacts:**

1. Contact the core members on the right directly.  
   Dr. Lou Bridges  
   Tel: 205-934-700 
   Email: bridges@uab.edu

2. Contact the center director, Dr. Carol Ballinger  
   Tel: 205-934-0964 
   Email: caball@uab.edu

3. Contact center coordinator, Dr. Carol Ballinger  
   Tel: 205-934-0964 
   Email: caball@uab.edu

**Specific Aims**

**Aim 1:** New investigator development. New investigators can present their grant ideas to the methodology core members and other relevant people to help their grant development. Many investigators have benefited from this process.

**Aim 2:** Original research in methodology that are applicable to clinical and translational research in arthritis and MSD.

**Aim 3:** Develop new investigators in the area of arthritis and MSD research.

**Aim 4:** Provide methodology seminars, workshops, and mini-courses to introduce the newest methodological approaches to the MCRC research base.

**People and Expertise**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Department</th>
<th>Expertise</th>
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| Xiangqin Cui, PhD.  | Associate Professor | The Department of Biostatistics. Dr. Cui’s expertise is in experimental design and data analysis for projects involving high-throughput technologies, such as microarrays, RT-PCR array, next-generation sequencing, proteomics, and epigenomics. She has conducted large number of methodology and application studies with small sample sizes but huge number of measurements. She has been involved in many collaboration projects in kidney disease, heart disease, cancer, RA, and muscle/neural research. | Office: RPHB 327M  
Phone: (205) 996-4154  
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| David Redden, PhD.  | Professor          | The Department of Biostatistics. Dr. Redden’s expertise is the design and analysis of cluster randomized trials. He also has 19 years of experience of collaborative experience in designing and analysing clinical studies. He has been involved in the development and analysis of projects/grants in AIDS, Diabetes, Obesity, Nutrition, Tuberculosis, Asthma. Early Childhood Education, Nutrition, Rheumatology, and Gerontology. His methodological research focuses on power calculation, appropriate analysis of group randomized trials with small numbers of clusters, and regression methodology. | Office: RPHB309D  
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| Meredith Kilgore, PhD. | Professor           | The Department of Health Care Organization and Policy. Dr. Kilgore is an expert in cost-effectiveness and technology assessment studies involving clinical information systems, clinical laboratory testing methods, and post-operative autologous blood transfusion following cardiac surgery, home health and hospice services in older cancer patients. His more recent work includes studies cancer treatment costs and cancer clinical trial design. | Office: LHL 438/Ryals 330D  
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| Nianjun Liu, PhD.   | Associate Professor | The Department of Biostatistics. Dr. Liu’s methodological research is related to genetic association analysis, population structure inference, and bioinformatics. He has developed novel statistical methods for haplotype analysis, for population structure/admixture inference, for doing structured association testing, and for genome-wide data and sequence data analysis. In addition to methodology research, he also has great interest and extensive experience in data analysis for a wide range of studies. He has collaborated with many researchers in medicine, public health, and genetics. | Office: RPHB 420A  
Phone: (205) 975-9190  
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| Elliot Lefkowitz, PhD. | Professor          | Department of Microbiology. Dr. Lefkowitz brings the expertise and resources of CCTS Informatics. Their five Bioinformaticians are available to assist investigators in the analysis of a wide range of data types including whole genome, exome, transcriptome, microbiome, and metagenomic sequences. They help to ensure that each individual and laboratory can maximize their ability to publish and obtain funding. In support of MCRC Projects, they have developed a microbiome analysis pipeline that provides rapid analysis of microbial ribosomal sequence data, producing a report that contrasts the microorganism composition profiles between different sets of samples. | Office: BB 276 Zip 2170  
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| T. Mark Beasley, PhD.  | Associate Professor | The Department of Biostatistics. Dr. Beasley’s expertise focuses in six major areas: (1) methodological problems in statistical genetics; (2) nonparametric statistics; (3) simulation studies; (4) the use of linear models; (5) longitudinal analysis; and (6) mediation analysis. He has also conducted large number collaboration studies in a variety of disciplines including education, psychology, medicine, genetics, and gerontology, pharmacology. | Office: RPHB 317  
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| Stella Aslibekyan, PhD.  | Assistant Professor | Department of Epidemiology. Dr. Aslibekyan is an epidemiologist with additional training in statistical genetics and epigenetics. Broadly, her expertise lies in gene-environment interactions, with the environment designed as a broad range of external factors such as diet, lifestyle, and the use of lipid-lowering or anti-inflammatory medications. She also has extensive experience with epidemiologic study design as well as with analyzing cutting-edge genomic and epigenomic data. | Office: RPHB 230J  
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