



NIH Common Fund Metabolomics Program

Increasing the National Capacity in an Emerging Field of Research

Metabolomics is the study of small molecules called metabolites. Metabolites are produced or consumed in all the chemical reactions that take place in the body to sustain life. The sum of all metabolites at any given moment—the metabolome—is a chemical readout of the state of the body, and it provides a wealth of information about nutrition, infection, health, and disease status.

The Common Fund's Metabolomics program, launched in 2012, aims to increase the national capacity to conduct metabolomics research. The program supports multiple capacity-building initiatives, including—

Regional Comprehensive Metabolomics Resource Cores (RCMRCs) to provide metabolomics services for the greater research community and develop cutting-edge technologies to enhance the sensitivity and speed with which specific elements of the metabolome can be identified and quantified. The Common Fund is supporting six RCMRCs:

- › Michigan Regional Comprehensive Metabolomics Resource Core (MRC)² at the University of Michigan
- › NIH West Coast Metabolomics Center at the University of California, Davis
- › NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International (Durham, North Carolina)
- › Southeast Center for Integrated Metabolomics (SECIM) at the University of Florida
- › Resource Center for Stable Isotope-Resolved Metabolomics (RC-SIRM) at the University of Kentucky
- › Mayo Clinic Metabolomics Resource Core (Rochester, Minnesota)

Development of Metabolomics Technologies to improve how samples are obtained, prepared, and handled; to increase the accuracy and precision of metabolomics detectors; and

to make data handling and analysis more robust. These activities are carried out by individual researchers throughout the country.

Metabolomics Training, ranging from introductory training for researchers new to the field to advanced hands-on training for metabolomics experts in emergent technologies and approaches. The program's training activities also include mentored research awards for young investigators.

Synthesis of High-Quality Reference Standards for common metabolites that are not currently available, as well as for novel ones with high potential for use in translational research. RTI International and SRI International were awarded contracts for synthesis of select metabolites nominated by researchers. To make a nomination, visit the Metabolomics Workbench at <http://www.metabolomicsworkbench.org/>.

Data Sharing and International Collaboration to facilitate communication and exchange of data among metabolomics researchers worldwide. All grantees in the Common Fund Metabolomics program are required to submit data to the Metabolomics Workbench, managed by the program's Data Repository and Coordinating Center (see below). Other metabolomics researchers are encouraged to use the Metabolomics Workbench to share their data with the greater metabolomics community. Data from the site are shared with the metabolomeXchange, an international collaboration of metabolomics data repositories, which links to data sets from researchers around the globe.

The data and other resources developed by the Common Fund Metabolomics program are managed by the **Data Repository and Coordinating Center (DRCC)** at the San Diego Supercomputer Center, University of California, San Diego. The DRCC makes these materials publicly available through the Metabolomics Workbench website: <http://www.metabolomicsworkbench.org/>.





How Can I Get Involved?

Training Opportunities

Links to upcoming, hands-on training courses, workshops, and symposia, as well as archived online training materials, are available on the Metabolomics Workbench: <http://www.metabolomicsworkbench.org/training>.

Pilot and Feasibility Studies Through the RCMRCs:

Each RCMRC supports Pilot and Feasibility (P&F) awards that are intended to (1) provide opportunities for investigators to advance basic, clinical, and translational biomedical science by incorporating metabolomic technologies into their research and (2) support projects that will provide preliminary data for new extramural proposal submissions. The call for P&F proposals occurs annually. Learn more about past and current P&F projects on the Metabolomics Workbench: <http://www.metabolomicsworkbench.org/nihmetabolomics/pilotandfeasibility.html>.

Administrative Supplements for Collaborative Activities to Promote Metabolomics Research

These administrative supplement awards aim to support collaborative research using metabolomics and to increase the number of investigators experienced in metabolomics study design, analysis methods, and data interpretation. These supplements provide funds to current NIH-funded research projects for collaborations between basic or clinical researchers and metabolomics experts to pursue biomedical studies requiring a metabolomics approach within the scope of the parent grant. All current Metabolomics program funding opportunities are listed at the Common Fund website: <https://commonfund.nih.gov/metabolomics/grants>.

Learn More About an RCMRC Near You

Each RCMRC maintains its own website. For a comparison of RCMRC areas of expertise and links to their websites, visit the Metabolomics Workbench: <http://www.metabolomicsworkbench.org/nihmetabolomics/rcmrcs.php>.

Access Metabolomics Data

Data from the Common Fund Metabolomics program are accessible through the Metabolomics Workbench: <http://www.metabolomicsworkbench.org/data>. International data sets are available through the metabolomeXchange: <http://metabolomexchange.org/>.



Connect With Us!

NIH Common Fund Metabolomics website:
<https://commonfund.nih.gov/metabolomics/>

Metabolomics Workbench: <http://www.metabolomicsworkbench.org/>



Listserv:
<https://list.nih.gov/cgi-bin/wa.exe?SUBED1=NIH-OSC-L&A=1>



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