

Curriculum: Year One

Strategic Approaches to Biomedical Research (SABR) Series: Our students are scientists and should learn as scientists typically learn. In our unique adaptation of problem-based learning, students are given an unsolved problem relevant to VAI's research. They uncover whatever they need to know and craft an experimental plan to address that problem. The five modules in this series provide progressive development of critical and creative thinking in an effective and professionally relevant method of learning.

Scientific Communication I and II: Scientific research relies heavily on effective communication of concepts, results and plans. These courses develop skills of listening well, reading well, speaking well and writing well for a range of purposes and audiences.

Experimental Design and Biostatistics: This course guides students to sound experimental design and fundamental statistical concepts, including descriptive statistics, probability, sampling, statistical distributions and linear regression using R and related tools.

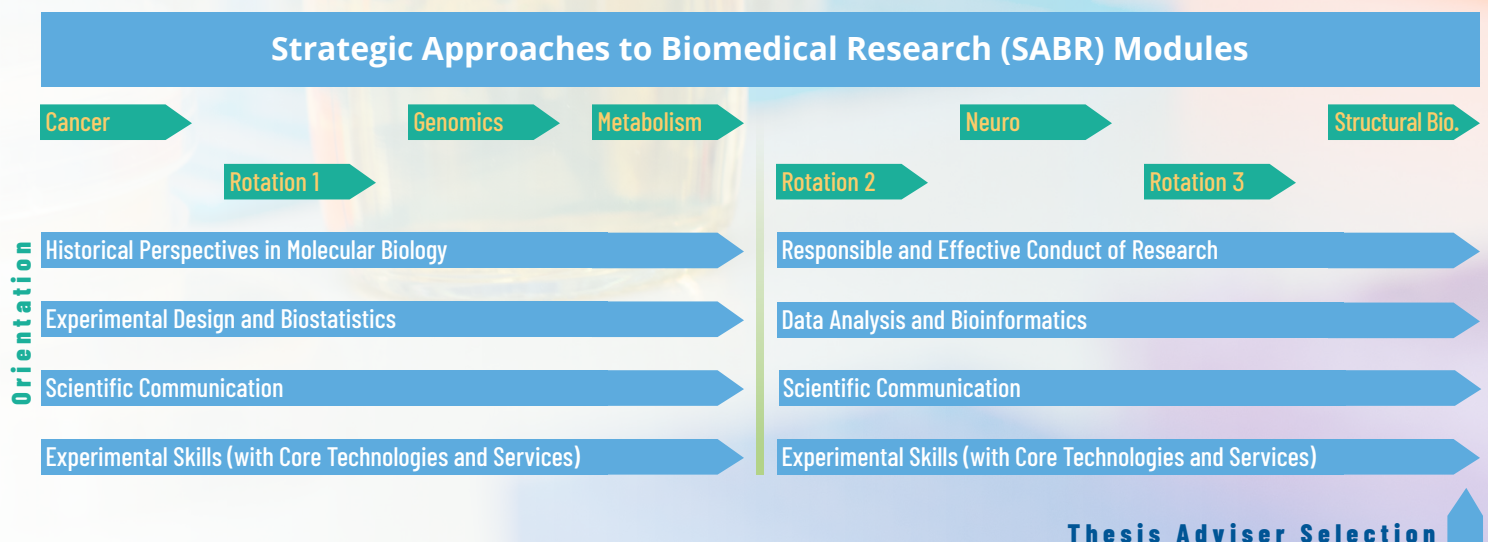
Data Analysis and Bioinformatics: This course applies analytical principles and skills to genomic, epigenomic and proteomic datasets using common algorithms and tools.

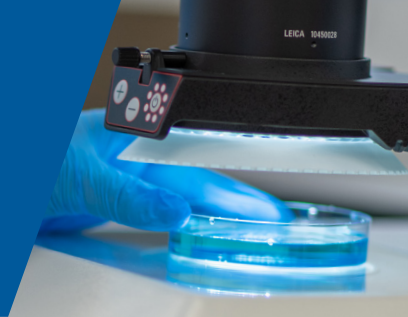
Experimental Skills I and II: These courses introduce students to the instruments, experimental design and analytic methods available through the VAI Core Technologies and Services.

Responsible and Effective Conduct of Research: This course addresses ethical and professional responsibilities that biomedical research leaders may face.

Historical Perspectives in Molecular Biology: This course familiarizes students with significant scientific breakthroughs in fields relevant to VAI's research.

Early and extensive lab experience: Our graduate students complete three lab rotations and select their thesis lab by the end of their first year.





Curriculum: Years Two Through Five

Grants I and II: These courses hone skills of effective scientific writing with a focus on the thesis research proposal for the first thesis advisory committee (Grants I) or for external fellowship applications (Grants II).

Professional Development: Students take at least four credits from among 15 courses in four focus areas:

- Scientific Leadership
- Teaching and Learning
- Biotech, Clinical, Industry and Shared Resources
- Communication, Public Policy and Advocacy

Special Topics: Students take at least four credits of courses that convey intensive training in current topics within specialized areas. Two courses are offered each semester.

Fall, Odd Years	Winter, Even Years	Fall, Even Years	Winter, Odd Years
Genomics Metabolism	Biostatistics Structural Biology	Epigenetics Immunology	Bioinformatics Protein Biochemistry

Students are also required to complete at least two additional credits from either the Professional Development or Special Topics areas.

Van Andel Institute Graduate School Curriculum Overview

