THE ART OF MOLECULAR PROGRAMMING

by the MOLECULAR PROGRAMMING SOCIETY

molecularprogrammers.org

Mission

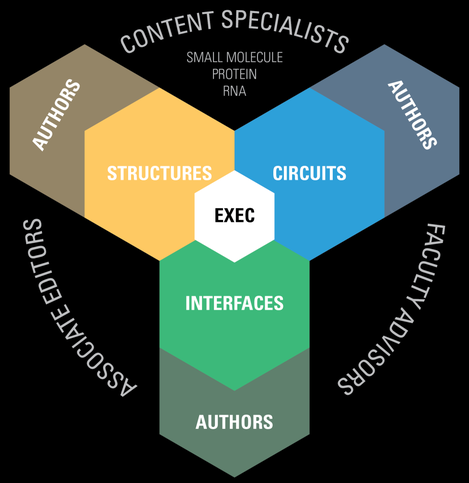
A community-driven textbook aiming to decrease the barrier to entry for new molecular programmers.

COMMUNITY
Bring together the molecular programming community in broad collaborative endeavors

EDUCATION
Collect and disseminate mature principles
Entry point for incoming researchers
Teaching resource

VISION
Define the field
Outline perspectives on future directions

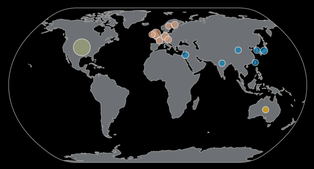
Project structure



Team

JOIN US!

Grassroots team of students, postdocs, faculty and entrepreneurs



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Textbook format

Hard copy & dynamically updated e-copy.

Invited authors contribute 2-8 pages on core topics.
(e.g. Origami design principles, DSD amplifiers)

Foundational topics from molecular programming perspective.
(e.g. Thermo, CRNs)

Breakout boxes on emerging and tangential topics.
(e.g. DNA-PAINT, microfluidics)

Instructional problem sets and solutions.

Appendix of supporting information and experimental methods.
(e.g. DNA purification)

Contents

Structures & molecular self-assembly

- From molecules to variables
- Molecules as a construction material
- Introduction to self-assembly
- Programmed molecular self-assemblies

Circuits & information processing

- Introduction to computation
- Programming molecular behaviors over time (CRNs)
- Nucleic acids as a universal substrate for molecular programming
- Incorporating enzymes into nucleic acid cascades
- Spatially-organized circuits
- Advanced topics in tile assembly (algorithmic self-assembly)

Interfaces & future directions

- Introduction to interfaces & applications
- The interface between traditional and molecular computers
- Chemical and physical interactions
- Interacting with biology, medical diagnostics and therapeutics

Contact us

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