



### About AIMMS

Despite major achievements in public health, people are still exposed to a large number of health threats nowadays. For example, infections are proliferating rapidly due to increasing individual mobility and the growing resistance of pathogenic organisms to treatment. Age-related malfunctions are inevitably on the rise in an aging population. The prevalence of high-burden diseases is growing. Even in relatively well-known disorders, current therapies are only effective in 40% of patient populations, while other diseases still completely lack effective therapies. All these factors lead to a largely unmet societal need for the elucidation of the molecular mechanisms of diseases that will yield innovative development of new small-molecule drugs, as well as other therapeutic and diagnostic strategies.

The last decade has witnessed important technological breakthroughs in the fields of molecular and cellular biology, combinatorial and designer drug synthesis and chemical space, bioanalytical methodologies, genomics and related approaches, sequencing methods and computational power. An increased understanding of the biological fate and the effects of medicines has advanced the relevance of molecular medicine significantly. The systems biology of molecular networks has recently been developed as a new perspective. These trends fuel a general expectation that much more comprehensive and sophisticated strategies will soon be available to address the problems indicated above and hence to improve our understanding of health and disease at various levels from the molecular to the systems level.

The Amsterdam Institute for Molecules, Medicines and Systems (AIMMS) aims to play a crucial role in this process by integrating and translating multi-faceted basic research in life sciences and the exact sciences to support the development of new drugs, therapeutics and diagnostics and conversely by translating related questions from the application domain into new basic research. AIMMS vertically integrates multiple scientific disciplines at the VU Campus into one institute, covering the different molecular, cellular and translational stages in the development of novel drugs, therapeutics (e.g. antibodies and other biologics) and molecular diagnostics, thus adding significant value to the current research effort. Apart from established discovery and development strategies, it will use systems biology and network approaches to obtain, integrate and analyze complex data from multiple experimental sources using interdisciplinary tools.

### Participating faculties

Faculty of Sciences, VU University Amsterdam  
Faculty of Earth and Life Sciences, VU University Amsterdam

### Director

Prof. Nico P.E. Vermeulen, Faculty of Sciences, VU University Amsterdam

### Research Programmes

1. Molecular mechanisms of biological processes
2. Design and characterization of molecules and medicines
3. Biomarkers and diagnostics

### Organisation

AIMMS was founded on 1 April 2010, with a five-year commitment from the participating faculties. Their deans make up its Governing Board. The Management Team consists of the scientific director (Nico Vermeulen) together with Holger Lill, Romano Orru and Bas Teusink who are opinion leaders or heads of departments involved. The scientific director and the operational manager (Jacqueline van Muijlwijk) are responsible for day-to-day management. The Governing Board and the Management Team are guided by an external Scientific Advisory Board.

### Facts & Figures

- External research funding: approx. 5.5 M€ per annum
- Research effort: approx. 140 FTEs
- Grants: about 50% of the funding comes from competitive grants (Netherlands Organisation for Scientific Research NWO, TIPharma, FP7, Centre for Molecular Medicine (CTMM), the Genomics Centres of Excellence)
- Awards include Toptalent grants and VENI-VIDI-VICI grants
- Publications: about 190 per annum (average over the past three years)
- CWTS crown indicator: 1.62 (over the past decade)
- Doctorates: 19 per annum (average over the past three years)
- Affiliated institutes: VU University Medical Center. CCA-V-ICI, Neuroscience Campus Amsterdam, Institute for Lasers, Life and Biophotonics Amsterdam (LaserLAB)
- Participation in national research institutes: Leiden-Amsterdam Center for Drug Research (LACDR), the Holland Research School of Molecular Chemistry (HRSMC), the Amsterdam Center for Multiscale Modeling (ACMM), The Netherlands Research School Coordination Catalysis (NRSCC) and the Netherlands Institute for Systems Biology (NISB)
- Current industrial collaboration with Ablynx, BASF, Danone, Johnson&Johnson, Galapagos, MSD, Shimadzu-Biotech, Solvay Pharmaceuticals and Vertex Pharmaceuticals

For further information, please visit our website: [www.aimms.vu.nl](http://www.aimms.vu.nl)