

Funding Opportunities from ERC

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ERC Starting Grant 2011

Integration (since 2011)
in the Netherlands (Delft Univ. of Technology)

Single-molecule spectroscopy (2002-2007)
U.S.A. (Univ. of Illinois at Urbana-Champaign)

MicroRNA (2007-2010)
South Korea (Seoul National Univ.)





Starting Grants

“Grant a (non-EU) scientist should obtain to establish an independent scientific career in Europe”

ERC Starting Grant 2011

- **Idea (integration—feasible but novel)**
- Social impact (fundamental but applicable)
- **Track record (publications)**
- **Name value**
- Independent group leader position

“A huge strength is his strong background in both biophysics and in biochemistry/molecular biology. **Such a combination of research experiences is rare** and places him in an ideal situation”

“The proposal is **high-risk, high-gain.**”

“While the work of his postdoctoral research was already in the field of miRNA, the described research is a **fundamental change of direction** and therefore can be seen as his first independent research goals”

“The **local environment is excellent** for the kind of challenging single-molecule biophysics work that he proposes to do”

After ERC Starting Grant (2017)

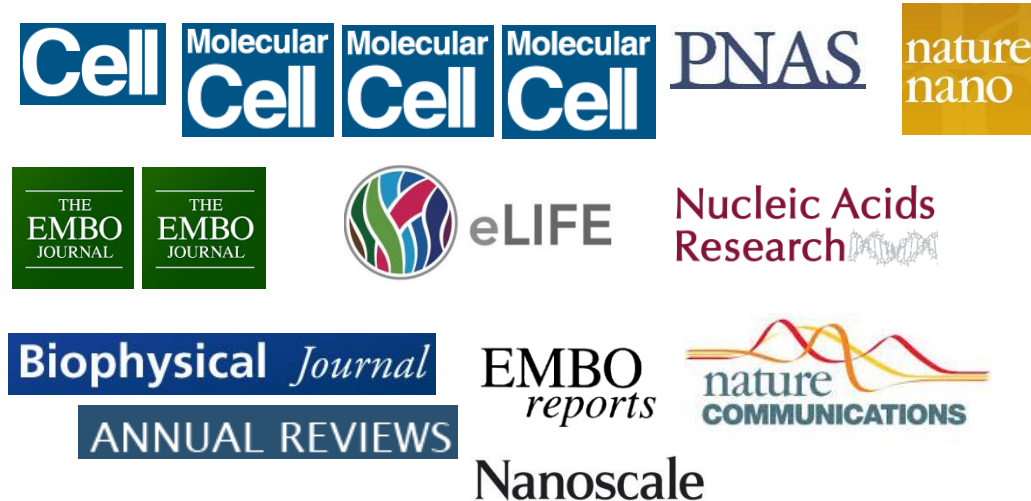


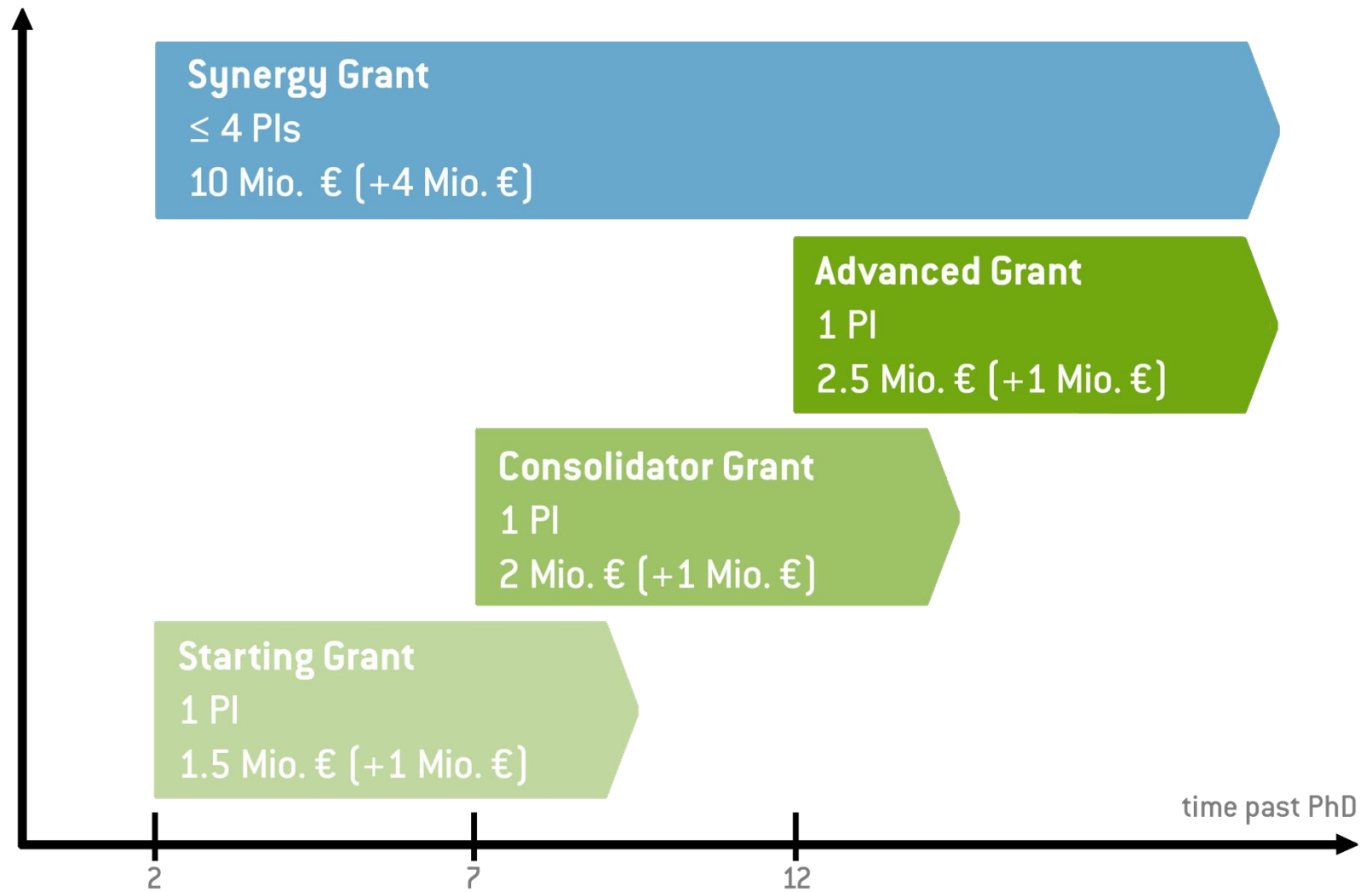
6 PhD, 2 post-docs, 1 fte technician
2 masters, 3 bachelors (as of Sep 2018)

RNA Biology

- MicroRNA (Argonaute, Dicer, ...)
- CRISPR (Cascade, Cas9, ...)

Major publications since 2011 (corresponding authorship)



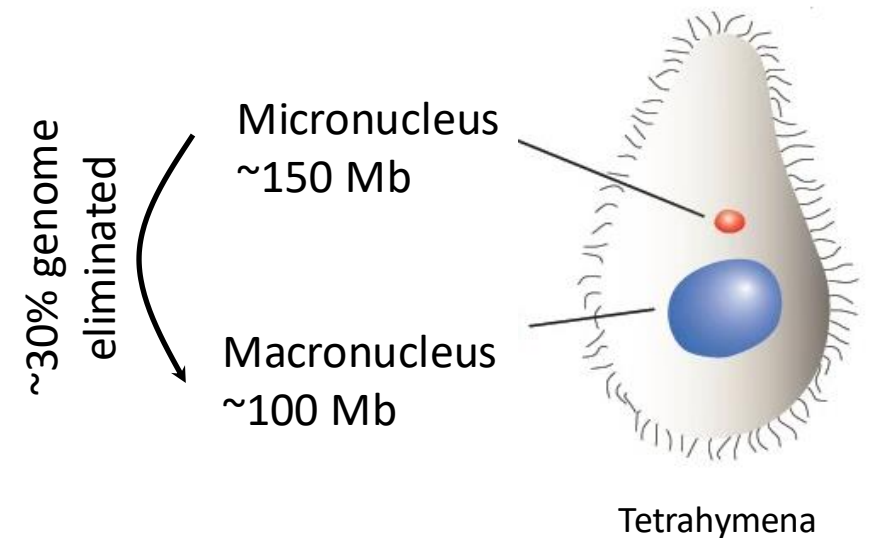


ERC Consolidator Grant 2018

- **Idea (high-risk, high-gain; feasible but new to the group)**
- **Track record (publications as a PI)**
- **New technique development**
- Social impact (fundamental but applicable)

ERC Consolidator Grant 2018

Repurposing Small RNA From Ciliates For Genome Editing



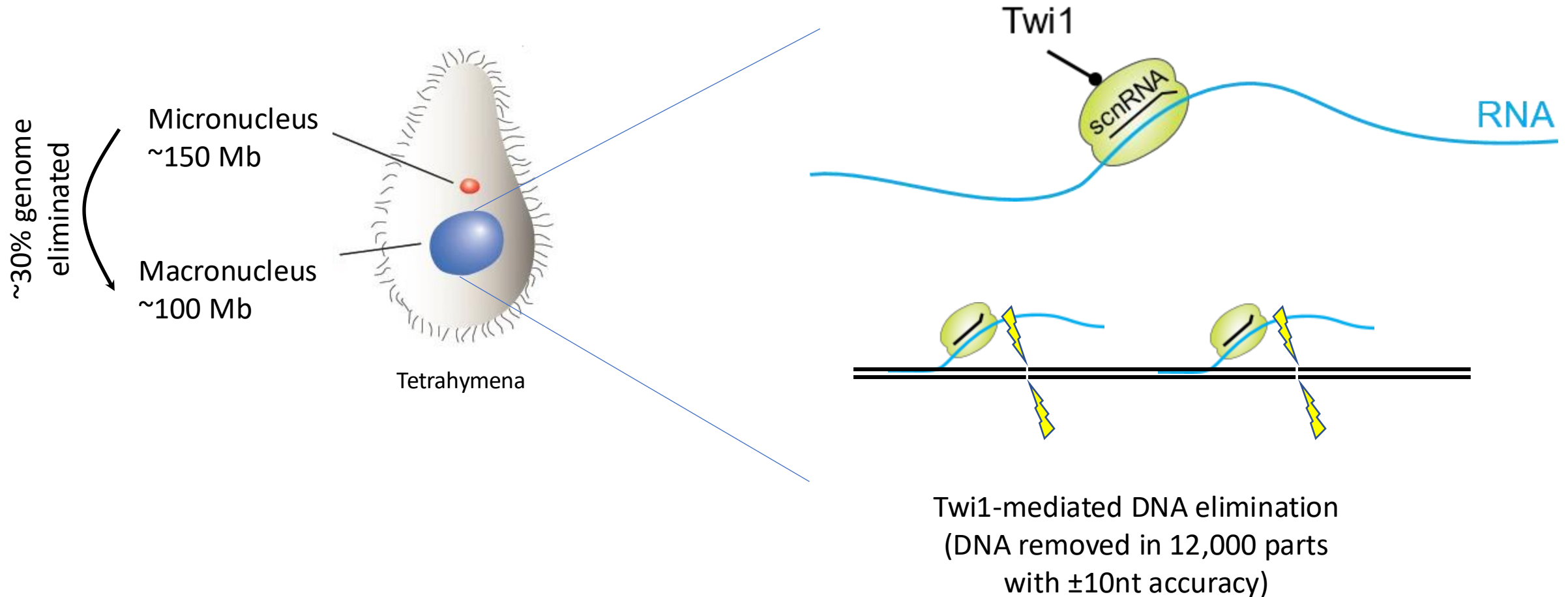
RIDING THE CRISPR WAVE

Biologists are embracing the power of gene-editing tools to explore genomes.



Mighty_RNA

Ciliated protozoa: natural genome engineers



ERC Consolidator Grant 2018

- **Idea (high-risk, high-gain; feasible but new to the group)**
- **Track record (publications as a PI)**
- **New technique development**
- Social impact (fundamental but applicable)

“The proposal represents state-of-the-art single molecule studies and is **high-risk/high-gain.**”

“The Panel is confident that the PI and his research team have the **proven track record** to bring the project forward in a productive and efficient manner.”

“The proposal addresses an important experimental challenge and research problem and brings **methods that can open new research directions.**”

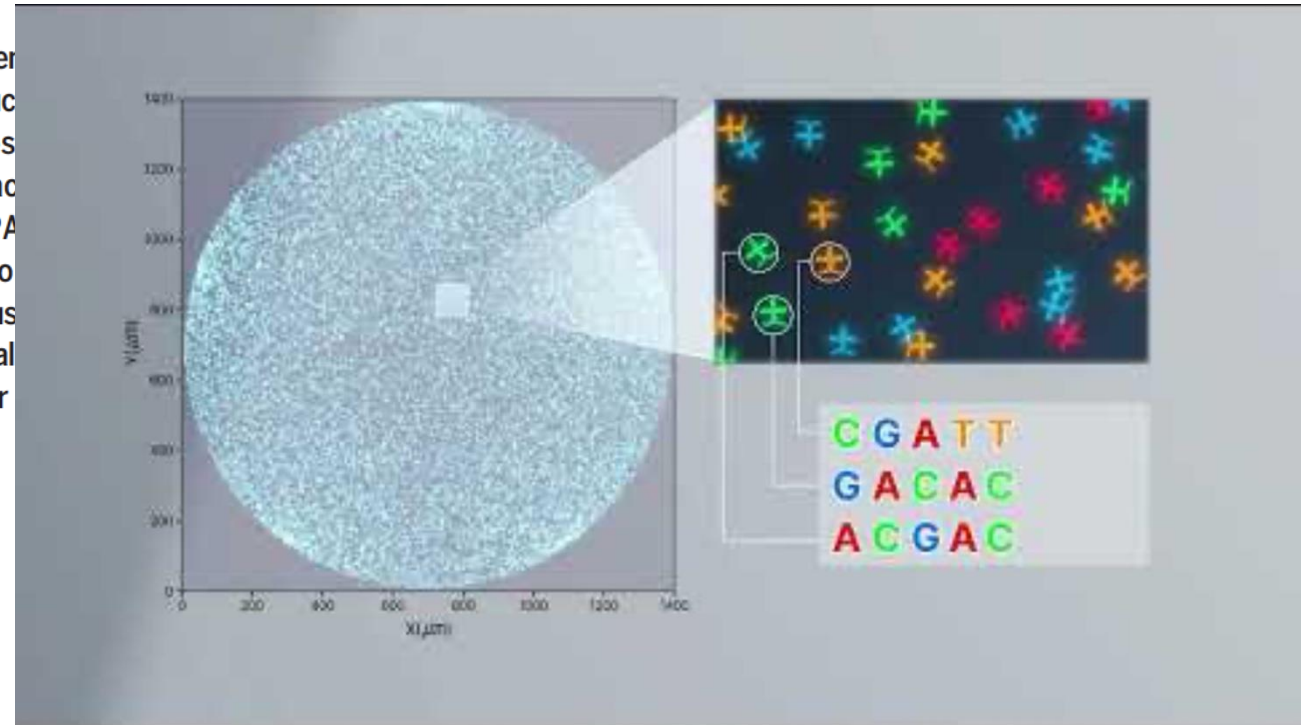
ERC Consolidator Grant 2018

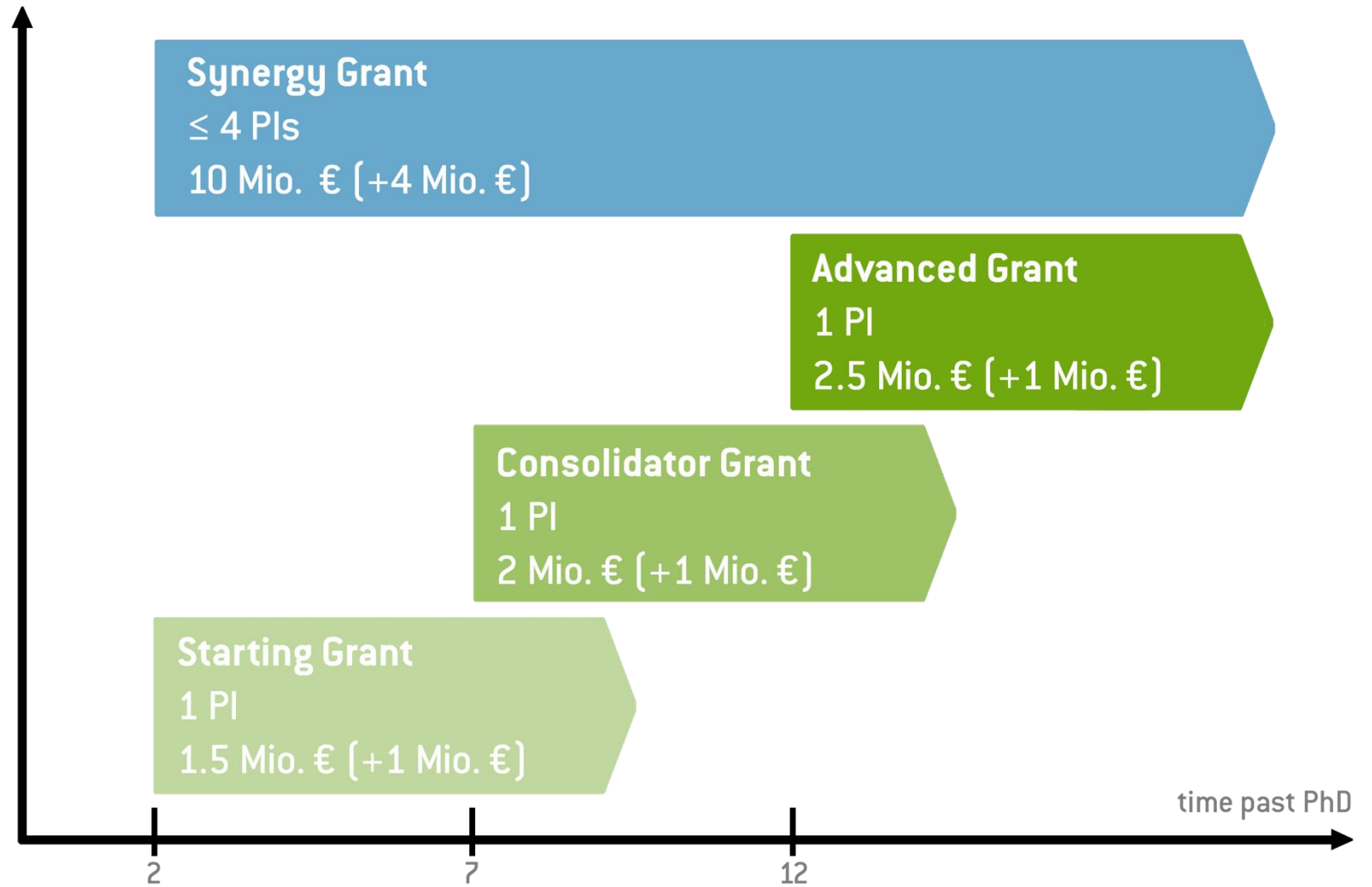
MOLECULAR BIOLOGY

Single-molecule structural and kinetic studies across sequence space

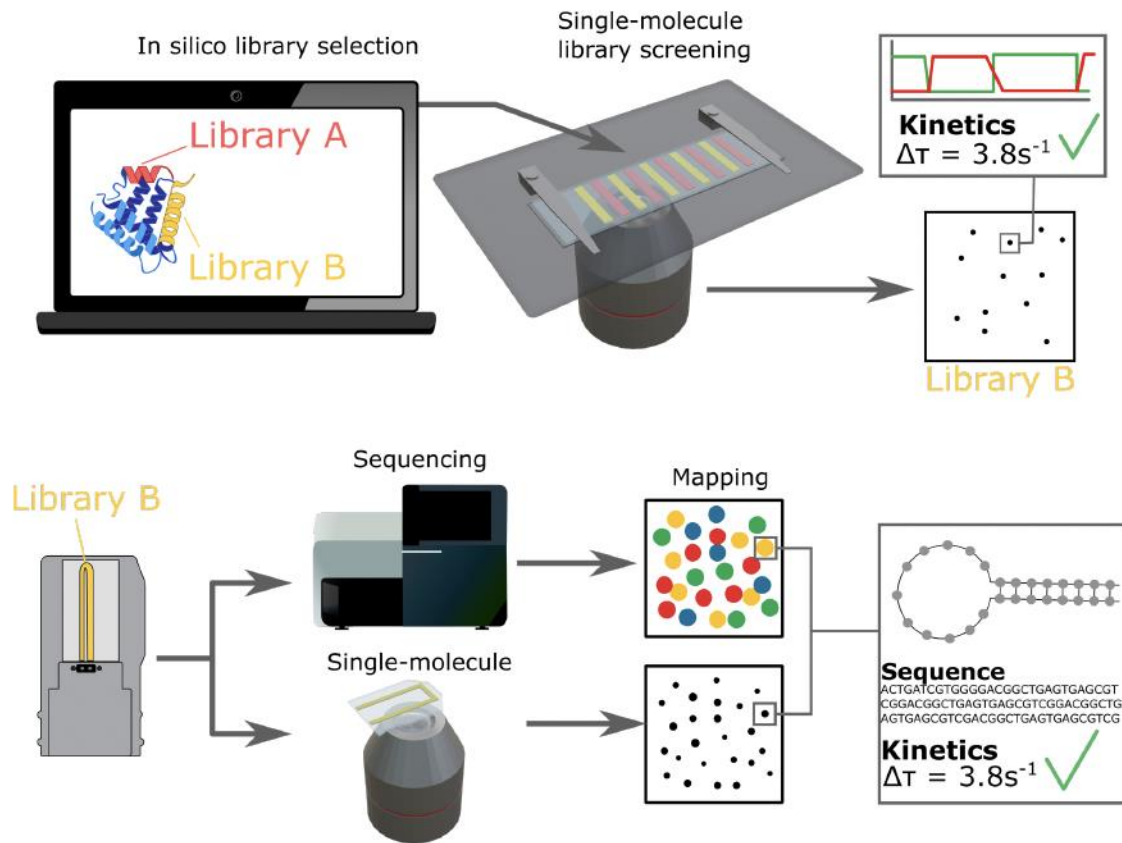
Ivo Severins^{1,2}, Carolien Bastiaanssen¹, Sung Hyun Kim^{1,3}, Roy B. Simons¹, John van Noort^{2*}, Chirlmin Joo^{1,3*}

At the core of molecular biology lies the intricate interplay between sequence and structure. Single-molecule techniques provide in-depth dynamic insights into structural transitions, but laborious assays impede functional screening of large sequence libraries. Single-molecule Parallel Analysis for Rapid eXploration of Sequence space (SPARXS) combines single-molecule fluorescence with next-generation sequencing. We applied SPARXS to study the sequence-dependent kinetics of the Holliday junction, a critical intermediate in homologous recombination. By examining the dynamics of millions of Holliday junctions, covering thousands of sequence variants, we demonstrated the ability of SPARXS to uncover sequence patterns, evaluate their impact on kinetics, and construct thermodynamic models. SPARXS emerges as a versatile tool for studying processes that underlie sequence-specific processes at the molecular scale.





ERC Proof of Concept



- Objective:
 - Aimed at helping early stages of **commercialization**.
- Eligibility:
 - The research idea must be **related to the results of the main ERC-funded project**.
 - Only ERC grant holders who have an ongoing main ERC grant or whose grant ended less than 12 months before the PoC call deadline.
- Budget and Funding:
 - €150,000 per project. Up to 18 months.
 - Covers activities such as **market research, intellectual property rights management, business opportunity assessments, technical validation, and prototyping**.
- Application and Evaluation:
 - **Simple application** process compared to the main ERC grants.