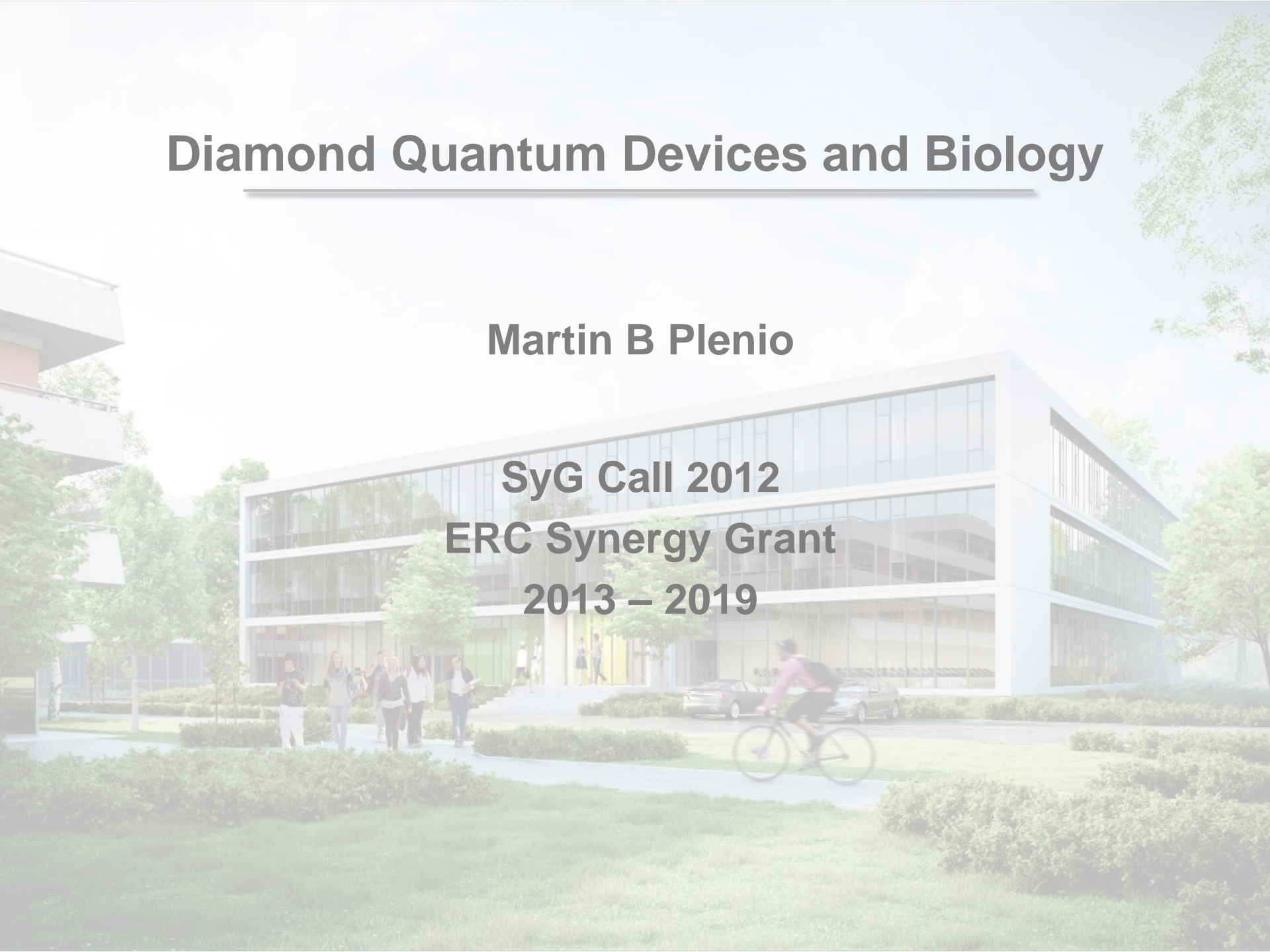


# **Diamond Quantum Devices and Biology**

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**Martin B Plenio**

**SyG Call 2012  
ERC Synergy Grant  
2013 – 2019**



# Building a Synergy Grant

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## From an Email to a Project

**From:** ph.hod [<mailto:ph.hod@imperial.ac.uk>]  
**Sent:** Freitag, 15. April 2011 13:55  
**To:** ph-staff-dl  
**Subject:** FW: New ERC Plus scheme - summary

Please find attached a summary of the new ERC Plus scheme being launched in July this year.

It will provide grants of up to 15Meuros over 6 years for groups of PIs each of ERC fellowship calibre.

Jo

The Key Question: How can I build a project that will stand out?

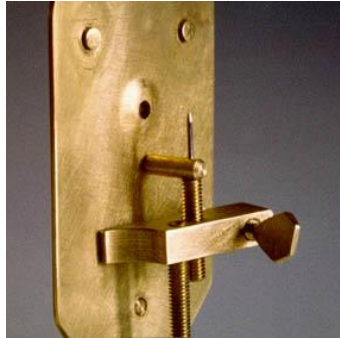
# Building a Synergy Grant

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From an Email to a Project

**Bold Science:** Bring Quantum Physics to the Biological Sciences

Optics



van Leeuwenhoek



1676 Bacteria

Hooke:

“by the help of microscopes,  
there is nothing so small, as  
to escape our inquiry“

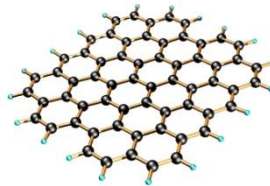
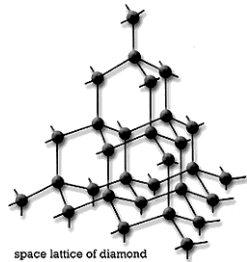
# Building a Synergy Grant

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From an Email to a Project

Bold Science: Bring Quantum Physics to the Biological Sciences

Max von Laue  
Konrad Röntgen  
X-ray crystallography



1914

Proof of the atomic structure of crystals by imaging

1962 DNA

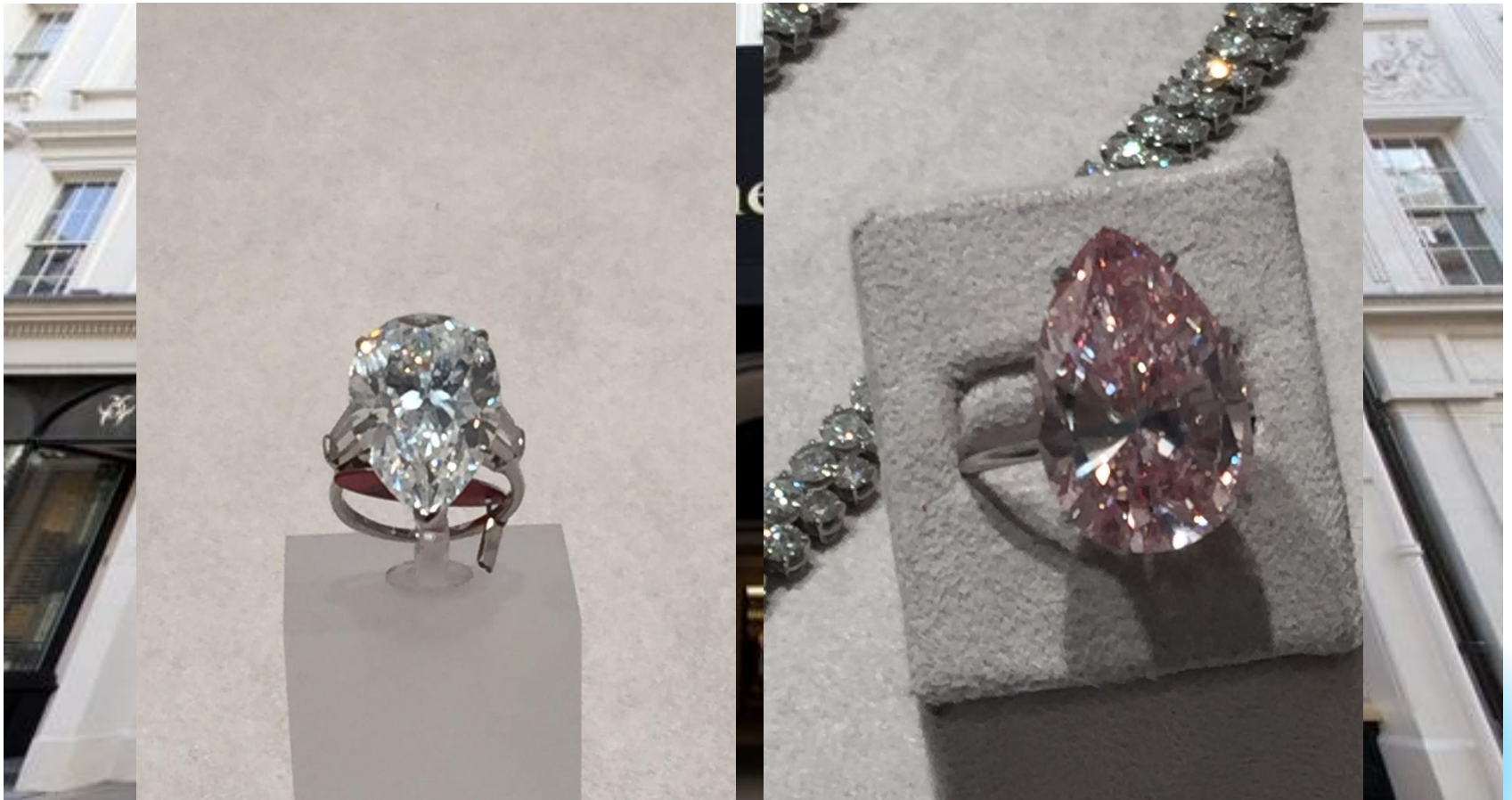


Watson: Physics  
Crick: Biochemistry  
Franklin: X-ray crystallography  
Wilkinson:

# Building a Synergy Grant

From an Email to a Project

**Bold Science:** Bring Quantum Physics to the Biological Sciences



Photos taken at Sotheby's London October 2016

Atom

Crystals are like people, its only the defects  
that make them interesting F. Franck

# Building a Synergy Grant

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From an Email to a Project

Vision for Institution:



Create Center for Quantum Biosciences

- Bring together researchers from physics, chemistry, biology & medicine
- Create Masters degree in the new field
- Use ERC as leverage to obtain federal funds for new research building

# Building a Synergy Grant

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From an Email to a Project

Vision for Institution & **Institutional Commitment:**



Create Center for Quantum Biosciences

- Bring together researchers from physics, chemistry, biology & medicine
- Create Masters degree in the new field
- Use ERC as leverage to obtain federal funds for new research building
- **Contribute share of building cost**
- **Establish Professorship at intersection of Biology/Physics/Chemistry**

# Building a Synergy Grant

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From an Email to a Project

Create Team:



**Fedor Jelezko**  
Institute of  
Quantum Optics



**Martin Plenio**  
Institute of  
Theoretical Physics



**Tanja Weil**  
Institute of  
Organic Chemistry III

all @ Ulm



# Building a Synergy Grant

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## From an Email to a Project

What it took to get it:

- ~ 4 - 6 weeks writing time

One lead writer so that it all sounds like singing from a single hymn sheet.

- ~ 2 weeks preparation for interview

Find someone that videos your talk over and over again until it is perfect.

Have an educated non-expert train with you to make sure that the entire committee gets the excitement

- Be at workshop in a game reserve so that download of result letter would take nerve racking 45 minutes

