

DUTCH BIOPHYSICS 2014

PROGRAMME

MONDAY 29 SEPTEMBER

09.30 – 10.30 ARRIVAL / REGISTRATION / COFFEE & TEA ROOM **KEMPENHAL**

10.35 – 10.45 OPENING ROOM **BRABANTZAAL**

10.45 – 11.15 I.1 **FRANCOIS NEDELEC** (European Molecular Biology Laboratory, Heidelberg)
On the organization of mitotic and meiotic spindles ROOM **BRABANTZAAL**

11.20 – 11.50 I.2 **ROSALIND ALLEN** (Edinburgh University)
How initial configuration affects the fate of biofilm-forming bacteria ROOM **BRABANTZAAL**

11.55 – 12.25 I.3 **PETER TIELEMAN** (University of Calgary)
Breaking lipids: bilayer defects and monolayer collapse ROOM **BRABANTZAAL**

12.30 – 13.25 LUNCH ROOM **KEMPENHAL**

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	PROTEIN FOLDING & PEPTIDE INTERACTIONS	FIBROUS NETWORKS	PHOTOSYSTEM BIOPHYSICS	ELECTRON MICROSCOPY

13.30 – 13.50	O.01 S.J. ROETERS (UvA) Alpha-synuclein and VEALYL fibrillation studied with advanced vibrational spectroscopy and electron microscopy	O.04 N.A. KURNIAWAN (AMOLF) Dissecting the biophysics of blood clotting	O.07 I.M. GRUBER (VU) A glimpse into the protein dynamics governing the fate of electronic excitations in single C2S2 supercomplexes of Photosystem II	O.10 K. KNOPP (RUG) Catching peroxisome formation intermediates: a microscopy approach
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13.50 – 14.10	O.02 M. WAWRZYNIAK (UU) Disordered proteins in the eyes of a molecular chaperone	O.05 A.J. LICUP (VU) Origins of nonlinear elasticity in collagen networks	O.08 I.E. WIJNTJES (ICFO/WUR) Strong antenna-enhanced fluorescence of a single light-harvesting complex shows photon anti-bunching	O.11 N.N. VAN DER WEL (AMC) The visualization and regeneration of the capsular layer of mycobacteria
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14.10 – 14.30	O.03 M.A. NOWOSIELSKI (UvA) Exploring the conformational space of alpha-synuclein	O.06 S.A. SEMERDZHIEV (UT) Self-assembly of protein fibrils into supra-fibrillar aggregates	O.09 T. MATHES (VU) Photoactivation of the plant UV-B photoreceptor UVR8	O.12 R.I. KONING (LUMC) Cryo correlative light microscopy and electron tomography illuminates lipids in Streptomyces cell division
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14.30 – 14.55 COFFEE & TEA ROOM **KEMPENHAL**

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	PROTEIN FOLDING & PEPTIDE INTERACTIONS	CYTOSKELETON AND ASSOCIATED MOTORS	SYSTEMS BIOPHYSICS	MICROSCOPY DEVELOPMENTS

15.00 – 15.20	O.13 E.C. PLOETZ (RUG) Single-molecule FRET reveals the relation between conformational dynamics and transport in membrane-embedded ABC importers	O.16 H. DOODHI (UU) Mechanistic insights into kinesin-based microtubule guidance	O.19 T.F.A. DE GREEF (TU/e) Threshold-sensing by an enzymatic reaction-diffusion network	O.22 Y. KATRUKHA (UU) Probing the interplay between molecular motors using quantum dots in live cells
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15.20 – 15.40	O.14 M.G. GROSBART (Erasmus MC) Multiple ligand-specific conformations of the MRE11/RAD50 DNA repair complex	O.17 S. ROTH (TUD) Positioning of microtubule organizing centers (MTOC) in 3D confinement	O.20 S. GUDE (AMOLF) Motility and growth of Escherichia coli	O.23 M.A. RASPE (NKI) SiFLIM: Single Image Frequency-Domain FLIM provides fast and photon-efficient lifetime data
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15.40 – 16.00	O.15 F.J. VAN EERDEN (RUG) Simulation of photosystem II dynamics in the thylakoid membrane	O.18 J. MIJALKOVIĆ (VU) Quantification of IFT-dynein dynamics in C. elegans	O.21 I. BLILOU (WUR) Building a protein interaction map for stem cell regulators in living Arabidopsis root	O.24 D. VAN DER ZWAAG (TU/e) Applying biophysics to non-biological objects: super resolution imaging of synthetic self-assembled systems
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16.00 – 18.00 POSTERSESSION 1 (ODD NUMBERS) ROOM **KEMPENHAL**

18.00 – 19.30 DINNER ROOM **BENELUXHAL**

19.30 – 20.00 COFFEE & TEA ROOM **KEMPENHAL**

20.00 – 21.00 I.4 **PETER HEGEMANN** (Humboldt-Universität zu Berlin)
Biophysics on sensory photoreceptors as the basis for successful application ROOM **BRABANTZAAL**

PROGRAMME

TUESDAY 30 SEPTEMBER

09.00 – 09.30 I.5 **ALEXANDER KROS** (Leiden University)
Understanding membrane fusion using a biomimetic model system ROOM **BRABANTZAAL**

09.35 – 10.05 I.6 **ANTOINETTE KILLIAN** (Utrecht University)
Membrane solubilization and nanodisc formation by an amphipatic styrene-maleic acid copolymer ROOM **BRABANTZAAL**

10.10 – 10.25 COFFEE & TEA ROOM **KEMPENHAL**

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	GENOME BIOPHYSICS	VESICLES & MEMBRANES I	NEW TECHNOLOGIES AND METHODS	MICROSCOPY OF CELLS

10.30 – 10.50	O.25 R. VLIJM (TUD) Nucleosome assembly dynamics involve spontaneous fluctuations in the handedness of tetrasomes	O.28 P. KUMAR (LEI) Interaction of alpha-synuclein with natural membranes	O.31 A.J. BOERSMA (RUG) A sensor for quantification of macromolecular crowding in living cells	O.34 I. IERMAK (WUR) Light-harvesting kinetics in plant leaves visualized by means of fluorescence lifetime imaging microscopy
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10.50 – 11.10	O.26 R.A. VAN DER VALK (LEI) The integrated response of genome organization and activity to environmental cues	O.29 D. VORSELEN (VU) Mechanical properties of extracellular vesicles from red blood cells revealed by AFM nano-indentation	O.32 C. PLESA (TUD) Study of DNA knots with solid-state nanopores	O.35 A. CAMBI (RUMC) Dynamics and architecture of podosomes: vertical oscillations, traveling waves and mesoscale coordination of actin structures
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11.10 – 11.30	O.27 S. TIRUVADI KRISHNAN (TUD) Investigation of the Tus-ter blocking efficacy during the chromosome replication of live Escherichia coli cells	O.30 N. LOPEZ MORA (LEI) Preparation of size tunable giant vesicles from cross-linked dextran (ethylene glycol) hydrogels	O.33 E.W.A. VISSER (TU/e) Tethered particle motion (TPM) characterizes binding types for lab-on-a-chip biosensing	O.36 E. SOKOL (UMC Groningen) Advanced imaging techniques reveal double membrane structures in pemphigus
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11.30 – 13.25 POSTERSESSION 2 (EVEN NUMBERS) AND LUNCH ROOM **KEMPENHAL**

NVVM PROGRAMME:

11.45 – 12.15 - NVVM GENERAL ASSEMBLY ROOM **DIEZEHAL**

12.20 – 13.20 - NL-BIOIMAGING ADVANCED MICROSCOPY MEETING ROOM **DIEZEHAL**

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	SINGLE-MOLECULE STUDIES	VESICLES & MEMBRANES II	MOTILITY	SUPERRESOLUTION MICROSCOPY

13.30 – 13.50	O.37 W.K. KROPPF (LEI) Single-pair FRET reveals unwrapping of nucleosomal DNA in folded chromatin fibers	O.40 A.U. ULLRICH (Freie Universität Berlin) Self-organized protein cluster formation explains location-specific function	O.43 K.M. TAUTE (AMOLF) A novel high-throughput method for tracking bacteria in 3D	O.46 R.P.J. NIEUWENHUIZEN (TUD) Making localization microscopy count
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13.50 – 14.10	O.38 T.M. CORDES (RUG) Self-healing organic fluorophores	O.41 I. BROUWER (VU) Direct visualization and quantification of Doc2b-mediated membrane hemifusion	O.44 O.D. BROEKMANS (VU) As the worm turns: a computational method for quantifying shape dynamics of tumbling C. elegans	O.47 R. HARKES (LEI) Clustering of H-Ras on the plasmamembrane of living cells
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14.10 – 14.30	O.39 M. GANJI (TUD) Single molecule FRET under crowding reveals mechanism of HIV-1 RT loading on DNA	O.42 J.M. CROWET (University of Liège) Modeling of the cyclic lipopeptide Pseudodesmin A self-assembly through molecular dynamic simulations	O.45 I.M. ILIE (UT) A new rotational brownian dynamics approach for the simulation of biological processes	O.48 M.M. MIKHAYLOVA (UU) Using novel tubulin nanobodies to resolve the neuronal microtubule network
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14.35 – 15.05 I.7 **JOHAN HOFKENS** (KU Leuven)
Advances in high resolution microscopy: from developing probes to superresolution imaging in C. elegans ROOM **BRABANTZAAL**

15.10 – 15.40 I.8 **JACCO VAN RHEENEN** (Hubrecht Institute)
Real-time subcellular imaging of cancer cell behavior in living mice ROOM **BRABANTZAAL**

15.45 – 15.55 CLOSING REMARKS & POSTER PRIZE AWARD ROOM **BRABANTZAAL**