

ANNUAL DUTCH MEETING ON MOLECULAR AND CELLULAR BIOPHYSICS PROGRAMME MONDAY 30 SEPTEMBER 2013

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

10.35 – 10.45 OPENING ROOM BRABANTZAAL

10.45 – 11.15 I.1 W.M. SHIH (Harvard University)
DNA nanostructures as building blocks for molecular biophysics and future therapeutics ROOM BRABANTZAAL

11.20 – 11.50 I.2 C. SYKES (Institut Curie)
Actin polymerization forces and acto-myosin contractility for cell shape changes ROOM BRABANTZAAL

11.55 – 12.25 I.3 A. DIASPRO (University of Genova)
Two-photon excitation and unlimited spatial resolution: great gigs in optical fluorescence microscopy ROOM BRABANTZAAL

12.30 – 13.25 LUNCH ROOM KEMPENHAL

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	DNA & DNA-TRANSACTIONS I	MEMBRANE FUNCTION & DYNAMICS I	CYTOSKELETAL ORGANIZATION	ELECTRON MICROSCOPY

13.30 – 13.45	O.01 C. JOO (TUD) Defense against viral attack: single-molecule view on a bacterial adaptive immune system	O.04 A. VARADARAJAN (VU) Investigating trans-membrane protein diffusion in living E. coli bacteria	O.07 D. ZAITSEVA (WUR) Mechanics of microtubule collisions in the plane of the plant cortex	O.10 M. KARREMAN (EMBL Heidelberg) Lights will guide you: finding your way with integrated correlative microscopy (SEN-prize lecture)
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13.50 – 14.05	O.02 H.J. GEERTSEMA (RUG) Single-molecule studies of polymerase dynamics and stoichiometry at the bacteriophage T7 replication machinery	O.05 R.P.T. KUSTERS (TU/e) Barriers in the brain: morphology and confinement as barrier for lateral diffusion in biological membranes	O.08 K. JIANG (UU) Non-centrosomal microtubules are stabilized by minus-end growth dependent CAMSAP deposition	O.11 C.A. DIEBOLDER (LUMC) Structure of the C1-immune complex revealed by cryo-electron tomography
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14.10 – 14.25	O.03 B.A. BERGHUIS (TUD) Terminating E. coli DNA replication: the workings of a molecular mouse trap at the single-molecule level	O.06 M. MELO (RUG) Molecular view on protein sorting into liquid-ordered membrane domains mediated by gangliosides and lipid anchors	O.09 N. TABERNER (AMOLF) How can microtubules establish cortical protein patterns?	O.12 N. LIV (TUD) On-demand electron microscopy of internalized quantum dots enabled by simultaneous live-cell
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14.30 – 14.55 COFFEE & TEA ROOM KEMPENHAL

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	DNA & DNA-TRANSACTIONS II	MEMBRANE FUNCTION & DYNAMICS II	PROTEIN FOLDING & STABILITY	LIGHT MICROSCOPY OF CELLS

15.00 – 15.15	O.13 A.S. BIEBRICHER (VU) The in vivo function of PICH elucidated by combined fluorescence and force microscopy	O.16 A. KOCER (RUG) Lipid-bilayer mediated control of an ion channel's activity	O.19 M. BACLAYON (VU) Unraveling the unfolding pathways of the autotransporter protein Haemoglobin protease using AFM	O.22 M. ESTEVES DA SILVA (UU) Controlled delivery of AMPA receptor-containing recycling endosomes to excitatory synapses
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15.20 – 15.35	O.14 M.C. MOOLMAN (TUD) Investigating the dynamics of the β 2-sliding clamp in E. coli at the single-cell level utilizing microfluidics and single-molecule fluorescence microscopy	O.17 A. PANDIT (VU) Structure and plasticity of the light-harvesting complex II (LHCII) revealed by NMR	O.20 S. LINDHOUD (TUD) Single-molecule FRET reveals folding-induced, progressive compaction of a molten globule	O.23 P. VAN BERGEIJK (UU) Optical control of intracellular transport
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15.40 – 15.55	O.15 M. REUTER (Erasmus MC) Mobility and interactions of homologous recombination proteins studied at the single-molecule level in living mammalian cells	O.18 T.A. WASSENAAR (RUG) The DAFT approach to in-silico investigation of membrane protein interactions	O.21 F.A. GUTIERREZ (TU/e) Altering the torsional rigidity of proteins by surfactants	O.24 J. TE RIET (RU) Dynamic coupling of ALCAM to the actin cortex under tension strengthens leukocyte adhesion to CD6
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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 A. KHODJAKOV (Wadsworth Center)
Cooperative mechanisms of mitotic spindle assembly ROOM BRABANTZAAL

ANNUAL DUTCH MEETING ON MOLECULAR AND CELLULAR BIOPHYSICS PROGRAMME TUESDAY 1 OCTOBER 2013

09.00 – 09.30 I.5 F.C. MACKINTOSH (VU University Amsterdam)
Active stresses and fluctuations in cytoskeletal networks ROOM BRABANTZAAL

09.35 – 10.05 I.6 TBA ROOM BRABANTZAAL

10.10 – 10.25 COFFEE & TEA ROOM KEMPENHAL

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	MULTIMOLECULAR ASSEMBLIES	FORCES AND MECHANICS	NEW SINGLE-MOLECULE TECHNIQUES	LIGHT MICROSCOPY METHODS & PROBES

10.30 – 10.45	O.25 A.H.G. HERNANDEZ-GARCIA (WUR) A supramolecular approach to virus assembly: design of a minimal artificial viral coat protein	O.28 A.M. MASHAGHI TABARI (TUD) What is the structure of strongly underwound DNA?	O.31 M.P.J. JONSSON (TUD) Single-molecule plasmonic nanopore sensor	O.34 B. MOEYAERT (KU Leuven) Structure-guided design of a novel fluorescent protein highlighter probe for multimodal fluorescence nanoscopy
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10.50 – 11.05	O.26 M. PRECIADO LÓPEZ (AMOLF) Sensing and remodelling actin architecture with microtubule growing ends	O.29 F. CELIKKOL (UT) Studying T-cell co-receptors with magnetic probes	O.32 G. SITTERS (VU) mAP! Manipulating DNA by ultrasound – single-molecules go acoustic	O.35 I.H.M. VAN DER VELDE (RUG) Ultrastable organic fluorophores for single-molecule and super-resolution microscopy via proximity of single oxidizing and reducing compounds
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11.10 – 11.25	O.27 A. IYER (UT) Probing α -synuclein membrane interactions on supported lipid bilayers	O.30 D.M.D. DONATO (UL) How p130Cas makes cells stronger yet more sensitive	O.33 I. HOHLBEIN (WUR) Improving throughput and time resolution in single-molecule FRET microscopy	O.36 B.M.C. CLOIN (UU) Localization based super-resolution microscopy using GFP and mCherry
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11.30 – 13.25 POSTERSESSION 2 (EVEN NUMBERS) AND LUNCH ROOM KEMPENHAL

NVVM PROGRAMME: ROOM DIEZEHAL

11.45 – 12.15 • NVVM GENERAL ASSEMBLY

12.20 – 13.20 • NL-BIOIMAGING ADVANCED MICROSCOPY MEETING

ROOM	BRABANTZAAL	BARONIEZAAL	GENDER FOYER	DIEZEHAL
SESSION	ELECTRONIC SPECTROSCOPY	SYSTEMS BIOPHYSICS	NEW TECHNIQUES AND METHODS	SINGLE-MOLECULE LIGHT MICROSCOPY

13.30 – 13.45	O.37 M. FERRETTI (VU) 2dimensional electronic spectroscopy on the b820 subunit of the bacterial core light-harvesting complex 1	O.40 N. WALKER (AMOLF) Gene expression noise: how much is explained by growth fluctuations?	O.43 A. KONIJNENBERG (Universiteit Antwerpen) Probing conformational states of an activated ion channel using a novel native mass spectrometry approach	O.46 I. HENDRIX (LMU München) Pulsed interleaved excitation fluctuation imaging: method & application to the early steps of HIV assembly
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13.50 – 14.05	O.38 C.C. VAN DEN AKKER (AMOLF) Unraveling the link between amyloid fibril mechanics and molecular conformation	O.41 R. HERMSEN (TUD) Stochastic models of evolution driven by spatial heterogeneity	O.44 D. DELGADO (VU) Photocurrents generated by Langmuir-Blodgett deposition of isolated bacterial RC-LH1 on bare gold	O.47 F. OSWALD (VU) Linking single-motor dynamics to ciliary ultrastructure using single-molecule super-resolution microscopy in Caenorhabditis elegans
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14.10 – 14.25	O.39 N. LIGUORI (VU) Chlamydomonas reinhardtii LhcSR protein has an inbuilt capacity to undergo a conformational change from a light-harvesting to a dissipative state	O.42 E. GOVERN (AMOLF) Fundamental limits on sensing chemical concentrations with linear biochemical networks	O.45 N. AKKILIC (UL) Controlled redox-switching of a single metalloprotein	O.48 A. ROBINSON (RUG) Spatial control of DNA repair in E. coli
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14.35 – 15.05 I.7 A.B. HOUTSMULLER (Erasmus MC)
Regulation of gene transcription, DNA repair and cell migration revealed by quantitative fluorescence imaging ROOM BRABANTZAAL

15.10 – 15.40 I.8 S.J. TANS (AMOLF)
Solving folding puzzles at the nanoscale ROOM BRABANTZAAL

15.45 – 15.55 CLOSING REMARKS & POSTER PRIZE AWARD