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Institutet för bioteknik  
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## Meritförteckning

### Positions of trust at external institutions

Board Member, Biocenter Finland

Member of Advisory Committee, worldwide Protein Data Bank (wwPDB)

Member of the Scientific Advisory Committee, Molecular and Cellular Structure cluster, EMBL-EBI

### Positions of trust at the University of Helsinki

Viikki Campus Cooperation Committee, deputy member

Member of HiLIFE management team

Member of Thriving Nature (PROFI5) steering group

Member of UHBRAIN (PROFI6) steering group

## Kvalifikationer

Title of Associate Professor, University of Oxford  
Tilldelningsdatum: 26 mars 2015

Title of Docent in Molecular Virology, Helsingfors universitet  
Tilldelningsdatum: 13 maj 2014

Title of University Research Lecturer, University of Oxford  
Tilldelningsdatum: 1 jan. 2014

Genetics, Doctor of Philosophy (PhD), University of Helsinki  
Tilldelningsdatum: 25 jan. 2006

Genetics, Master of Science (MSc), University of Helsinki  
Tilldelningsdatum: 23 feb. 2001

## Anställning

### direktör

Institutet för bioteknik  
Helsingfors universitet  
Helsinki, Finland  
1 sep. 2020 → present

### professor

Forskningsprogrammet för molekylära och integrativa biovetenskaper  
Helsingfors universitet  
Finland  
1 juni 2021 → present

#### **Honorary Visiting Research Fellow**

University of Oxford  
Storbritannien  
1 apr. 2020 → present

#### **Tutkimusryhmän johtaja**

University of Oxford  
Oxford, Storbritannien  
1 jan. 2015 → 31 mars 2020

#### **Akatemiatutkija**

University of Oxford  
Oxford, Storbritannien  
1 jan. 2010 → 31 dec. 2014

## **Forskningsoutput**

#### **Immunogenic recombinant Mayaro virus-like particles present natively assembled glycoprotein**

Kim, Y. C., Watanabe, Y., Arlen-Celina, L., Song, X., Souza, R. D. O., Stass, R., Azar, S. R., Rossi, S. L., Claser, C., Kuemmerer, B. M., Crispin, M., Bowden, T. A., Huiskonen, J. T. & Reyes-Sandoval, A., 17 dec. 2024, I: npj vaccines. 9, 1, 13 s., 243.

#### **Structural characterization and epitope mapping of the AAVX affinity purification ligand**

Mietzsch, M., Kamat, M., Basso, K., Chipman, P., Huiskonen, J. T. & McKenna, R., 12 dec. 2024, I: Molecular therapy-Methods & clinical development. 32, 4, 5 s., 101377.

#### **The Structure of Spiroplasma Virus 4: Exploring the Capsid Diversity of the Microviridae**

Mietzsch, M., Kailasan, S., Bennett, A., Chipman, P., Fane, B., Huiskonen, J. T., Clarke, I. N. & McKenna, R., juli 2024, I: Viruses. 16, 7, 17 s., 1103.

#### **Community recommendations on cryoEM data archiving and validation**

Kleywegt, G. J., Adams, P. D., Butcher, S. J., Lawson, C., Rohou, A., Rosenthal, P. B., Subramaniam, S., Topf, M., Abbott, S., Baldwin, P. R., Berrisford, J. M., Bricogne, G., Choudhary, P., Croll, T. I., Danev, R., Ganesan, S. J., Grant, T., Gutmanas, A., Henderson, R. & Heymann, J. B. och 27 andra, Huiskonen, J. T., Istrate, A., Kato, T., Lander, G. C., Lok, S.-M., Ludtke, S. J., Murshudov, G. N., Pye, R., Pintilie, G. D., Richardson, J. S., Sachse, C., Salih, O., Scheres, S. H. W., Schroeder, G. F., Sorzano, C. O. S., Stagg, S. M., Wang, Z., Warshamanage, R., Westbrook, J. D., Winn, M. D., Young, J. Y., Burley, S. K., Hoch, J. C., Kurisu, G., Morris, K., Patwardhan, A. & Velankar, S., mars 2024, I: IUCrJ. . 11, Part 2, s. 140-151 12 s.

#### **Nanobody engineering for SARS-CoV-2 neutralization and detection**

Hannula, L., Kuivainen, S., Lasham, J., Kant, R., Kareinen, L., Bogacheva, M., Strandin, T., Sironen, T., Hepojoki, J., Sharma, V., Saviranta, P., Kipar, A., Vapalahti, O., Huiskonen, J. T. & Rissanen, I., feb. 2024, I: Microbiology Spectrum. 12, 4, 18 s., e0419922.

#### **Structure and interactions of the endogenous human Commander complex**

Laulumaa, S., Kumpula, E. P., Huiskonen, J. T. & Varjosalo, M., 2024, I: Nature Structural and Molecular Biology. 31, s. 925-938 13 s.

#### **Molecular view of ER membrane remodeling by the Sec61/TRAP translocon**

Karki, S., Javanainen, M., Rehan, S., Tranter, D., Kelloso, J., Huiskonen, J., Happonen, L. J. & Paavilainen, V., 20 nov. 2023, I: EMBO Reports. 24, 16 s., e57910.

#### **DNA-origami-directed virus capsid polymorphism**

Seitz, I., Saarinen, S., Kumpula, E. P., McNeale, D., Anaya-Plaza, E., Lampinen, V., Hytönen, V. P., Sainsbury, F., Cornelissen, J. J. L. M., Linko, V., Huiskonen, J. T. & Kostianen, M. A., okt. 2023, I: *Nature Nanotechnology*. 18, 10, s. 1205–1212

#### **Global analysis of aging-related protein structural changes uncovers enzyme-polymerization-based control of longevity**

Paukštytė, J., López Cabezas, R. M., Feng, Y., Tong, K., Schnyder, D., Elomaa, E., Gregorova, P., Doudin, M., Särkkä, M., Sarameri, J., Lippi, A., Vihinen, H., Juutila, J., Nieminen, A., Törönen, P., Holm, L., Jokitalo, E., Krisko, A., Huiskonen, J. & Sarin, L. P. och 4 andra, Hietakangas, V., Picotti, P., Barral, Y. & Saarikangas, J., 21 sep. 2023, I: *Molecular Cell*. 83, 18, s. 3360-3376

#### **Intranasal trimeric sherpabody inhibits SARS-CoV-2 including recent immunoevasive Omicron subvariants**

Mäkelä, A. R., Ugurlu, H., Hannula, L., Kant, R., Salminen, P., Fagerlund, R., Mäki, S., Haveri, A., Strandin, T., Kareinen, L., Hepojoki, J., Kuivanen, S., Levanov, L., Pasternack, A., Naves, R. A., Ritvos, O., Österlund, P., Sironen, T., Vapalahti, O. & Kipar, A. och 3 andra, Huiskonen, J. T., Rissanen, I. & Saksela, K., 24 mars 2023, I: *Nature Communications*. 14, 1, 12 s., 1637.

#### **MANF regulates neuronal survival and UPR through its ER-located receptor IRE1 $\alpha$**

Kovaleva, V., Yu, L.-Y., Ivanova, L., Shpironok, O., Nam, J., Eesmaa, A., Kumpula, E.-P., Sakson, S., Toots, U., Ustav, M., Huiskonen, J. T., Voutilainen, M. H., Lindholm, P., Karelson, M. & Saarma, M., 28 feb. 2023, I: *Cell Reports*. 42, 2, 31 s., 112066.

#### **Structural basis underlying specific biochemical activities of non-muscle tropomyosin isoforms**

Selvaraj, M., Kokate, S. B., Reggiano, G., Kogan, K., Kotila, T., Kremneva, E., DiMaio, F., Lappalainen, P. & Huiskonen, J. T., 31 jan. 2023, I: *Cell Reports*. 42, 1, 15 s., 111900.

#### **Proteiinien rakennemuutosten kartoittaminen paljastaa, miten solut ikääntyvät**

Paukštytė, J., López Cabezas, R. M., Feng, Y., Tong, K., Schnyder, D., Elomaa, E., Gregorova, P., Doudin, M., Särkkä, M., Sarameri, J., Lippi, A., Vihinen, H., Juutila, J., Nieminen, A., Törönen, P., Holm, L., Jokitalo, E., Krisko, A., Huiskonen, J. & Sarin, L. P. och 4 andra, Hietakangas, V., Picotti, P., Barral, Y. & Saarikangas, J., 2023, I: *Duodecim*. 139, 19, s. 1575 1 s.

#### **Signal peptide mimicry primes Sec61 for client-selective inhibition**

Rehan, S., Tranter, D., Sharp, P. P. P., Craven, G. B. B., Lowe, E., Anderl, J. L. L., Muchamuel, T., Abrishami, V., Kuivanen, S., Wenzell, N. A. A., Jennings, A., Kalyanaraman, C., Strandin, T., Javanainen, M., Vapalahti, O., Jacobson, M. P. P., McMinn, D., Kirk, C. J., Huiskonen, J. T. & Taunton, J. och 1 andra, Paavilainen, V. O., 2023, I: *Nature Chemical Biology*. 19, s. 1054–1062 27 s.

#### **Cryo-EM structure of ssDNA bacteriophage $\Phi$ CJ23 provides insight into early virus evolution**

Kejzar, N., Laanto, E., Rissanen, I., Abrishami, V., Selvaraj, M., Moineau, S., Ravantti, J., Sundberg, L. R. & Huiskonen, J. T., dec. 2022, I: *Nature Communications*. 13, 7478.

#### **Mechanistic Insights into the Activation of Lecithin-Cholesterol Acyltransferase in Therapeutic Nanodiscs Composed of Apolipoprotein A-I Mimetic Peptides and Phospholipids**

Giorgi, L., Niemelä, A., Kumpula, E.-P., Natri, O., Parkkila, P., Huiskonen, J. T. & Koivuniemi, A., 7 nov. 2022, I: *Molecular Pharmaceutics*. 19, 11, s. 4135-4148 14 s.

#### **Structural basis of rapid actin dynamics in the evolutionarily divergent Leishmania parasite**

Kotila, T., Wioland, H., Selvaraj, M., Kogan, K., Antenucci, L., Jegou, A., Huiskonen, J. T., Romet-Lemonne, G. & Lappalainen, P., 15 juni 2022, I: *Nature Communications*. 13, 1, 18 s., 3442.

#### **Snapshots of actin and tubulin folding inside the TRiC chaperonin**

Kelly, J. J., Tranter, D., Pardon, E., Chi, G., Kramer, H., Happonen, L., Knee, K. M., Janz, J. M., Steyaert, J., Bulawa, C., Paavilainen, V. O., Huiskonen, J. T. & Yue, W. W., maj 2022, I: *Nature Structural and Molecular Biology*. 29, s. 420–429 24 s.

**Structure of a Cell Entry Defective Human Adenovirus Provides Insights into Precursor Proteins and Capsid Maturation: Cryo-EM structure of ts1 virion of an adenovirus**

Yu, X., Mullen, T. M., Abrishami, V., Huiskonen, J. T., Nemerow, G. R. & Reddy, V. S., 30 jan. 2022, I: *Journal of Molecular Biology*. 434, 2, 13 s., 167350.

**Localized reconstruction in Scipion expedites the analysis of symmetry mismatches in cryo-EM data**

Abrishami, V., Ilca, S. L., Gómez-Blanco, J., Rissanen, I., de la Rosa-Trevín, J. M., Reddy, V. S., Carazo, J. M. & Huiskonen, J. T., mars 2021, I: *Progress in Biophysics & Molecular Biology*. 160, s. 43-52 10 s.

**Structural Basis for a Neutralizing Antibody Response Elicited by a Recombinant Hantaan Virus Gn Immunogen**

Rissanen, I., Krumm, S. A., Stass, R., Whitaker, A., Voss, J. E., Bruce, E. A., Rothenberger, S., Kunz, S., Burton, D. R., Huiskonen, J. T., Botten, J. W., Bowden, T. A. & Doores, K. J., 2021, I: *mBio*. 12, 4, 15 s., 02531.

**Molecular rationale for antibody-mediated targeting of the hantavirus fusion glycoprotein**

Rissanen, I., Stass, R., Krumm, S. A., Seow, J., Hulswit, R. J. G., Paesen, G. C., Hepojoki, J., Vapalahti, O., Lundkvist, Å., Reynard, O., Volchkov, V., Doores, K. J., Huiskonen, J. T. & Bowden, T. A., 22 dec. 2020, I: *eLife*. 9, 23 s., 58242.

**The Hantavirus Surface Glycoprotein Lattice and Its Fusion Control Mechanism**

Serris, A., Stass, R., Bignon, E. A., Muena, N. A., Manuguerra, J.-C., Jangra, R. K., Li, S., Chandran, K., Tischler, N. D., Huiskonen, J. T., Rey, F. A. & Guardado-Calvo, P., 15 okt. 2020, I: *Cell*. 183, 2, s. 442-456e16 31 s.

**Assessment of Immunogenicity and Efficacy of a Zika Vaccine Using Modified Vaccinia Ankara Virus as Carriers.**

López-Camacho, C., Kim, Y. C., Abbink, P., Larocca, R. A., Huiskonen, J. T., Barouch, D. H. & Reyes-Sandoval, A., 2 nov. 2019, I: *Pathogens*. 8, 4, 11 s., E216.

**The structural basis of lipid scrambling and inactivation in the endoplasmic reticulum scramblase TMEM16K**

Bushell, S. R., Pike, A. C. W., Falzone, M. E., Rorsman, N. J. G., Ta, C. M., Corey, R. A., Newport, T. D., Christianson, J. C., Scofano, L. F., Shintre, C. A., Tessitore, A., Chu, A., Wang, Q., Shrestha, L., Mukhopadhyay, S. M. M., Love, J. D., Burgess-Brown, N. A., Sitsapesan, R., Stansfeld, P. J. & Huiskonen, J. T. och 3 andra, Tammara, P., Accardi, A. & Carpenter, E. P., 2 sep. 2019, I: *Nature Communications*. 10, 16 s., 3956.

**Structures of enveloped virions determined by cryogenic electron microscopy and tomography: Advances in Virus Research**

Stass, R., Ng, W. M., Kim, Y. C. & Huiskonen, J. T., 1 aug. 2019, *Complementary Strategies to Study Virus Structure and Function*. Rey, F. A. (red.). Academic Press, Vol. 105. s. 35-71 37 s. (Advances in Virus Research).

**Multiple liquid crystalline geometries of highly compacted nucleic acid in a dsRNA virus**

Ilca, S., Sun, X., El Omari, K., Kotecha, A., Haas, F. D., DiMaio, F., Grimes, J. M., Stuart, D. I., Poranen, M. M. & Huiskonen, J. T., 13 juni 2019, I: *Nature*. 570, s. 252-+

**Assessment of Immunogenicity and Neutralisation Efficacy of Viral-Vectored Vaccines Against Chikungunya Virus**

Lopez-Camacho, C., Kim, Y. C., Blight, J., Moreli, M. L., Montoya-Diaz, E., Huiskonen, J. T., Kuemmerer, B. M. & Reyes-Sandoval, A., apr. 2019, I: *Viruses (Basel)*. 11, 4, 17 s., 322.

**Assembly of complex viruses exemplified by a halophilic euryarchaeal virus**

De Colibus, L., Roine, E., Walter, T. S., Ilca, S. L., Wang, X., Wang, N., Roseman, A. M., Bamford, D., Huiskonen, J. T. & Stuart, D., 29 mars 2019, I: *Nature Communications*. 10, 9 s., 1456.

**The structure of a prokaryotic viral envelope protein expands the landscape of membrane fusion proteins**

El Omari, K., Li, S., Kotecha, A., Walter, T. S., Bignon, E., Harlos, K., Somerharju, P., Haas, F. D., Clare, D., Molin, M., Hurtado, F., Li, M., Grimes, J. M., Bamford, D. H., Tischler, N. D., Huiskonen, J. T., Stuart, D. I. & Roine, E., 19 feb. 2019, I: *Nature Communications*. 10, 11 s., 846.

Understanding the structure and role of DNA-PK in NHEJ: How X-ray diffraction and cryo-EM contribute in complementary ways.

Wu, Q., Liang, S., Ochi, T., Chirgadze, D. Y., Huiskonen, J. T. & Blundell, T. L., 20 jan. 2019, (!E-pub ahead of print) I: Progress in Biophysics & Molecular Biology.

**A Protective Monoclonal Antibody Targets a Site of Vulnerability on the Surface of Rift Valley Fever Virus**

Allen, E. R., Krumm, S. A., Raghvani, J., Halldorsson, S., Elliott, A., Graham, V. A., Koudriakova, E., Harlos, K., Wright, D., Warimwe, G. M., Brennan, B., Huiskonen, J. T., Dowall, S. D., Elliott, R. M., Pybus, O. G., Burton, D. R., Hewson, R., Doores, K. J. & Bowden, T. A., 26 dec. 2018, I: Cell Reports. 25, 13, s. 3750-+ 13 s.

**Characterization of a potent and highly unusual minimally enhancing antibody directed against dengue virus**

Renner, M., Flanagan, A., Dejnirattisai, W., Puttikhunt, C., Kasinrerker, W., Supasa, P., Wongwiwat, W., Chawansuntati, K., Duangchinda, T., Cowper, A., Midgley, C. M., Malasit, P., Huiskonen, J. T., Mongkolsapaya, J., Sreaton, G. R. & Grimes, J. M., nov. 2018, I: Nature immunology.. 19, 11, s. 1248-+ 13 s.

**Beyond structures of highly symmetric purified viral capsids by cryo-EM**

Stass, R., Ilca, S. L. & Huiskonen, J. T., okt. 2018, I: Current Opinion in Structural Biology. 52, s. 25-31 7 s.

**Structure of the Lassa virus glycan shield provides a model for immunological resistance**

Watanabe, Y., Raghvani, J., Allen, J. D., Seabright, G. E., Li, S., Moser, F., Huiskonen, J. T., Strecker, T., Bowden, T. A. & Crispin, M., 10 juli 2018, I: Proceedings of the National Academy of Sciences of the United States of America. 115, 28, s. 7320-7325 6 s.

**Mycobacterium tuberculosis CarD, an essential global transcriptional regulator forms amyloid-like fibrils**

Kaur, G., Kaundal, S., Kapoor, S., Grimes, J. M., Huiskonen, J. T. & Thakur, K. G., 4 juli 2018, I: Scientific Reports. 8, 13 s., 10124.

**Image processing for cryogenic transmission electron microscopy of symmetry-mismatched complexes**

Huiskonen, J. T., 27 apr. 2018, I: Bioscience Reports. 38, 2, 13 s., 20170203.

**Towards in cellulo virus crystallography**

Duyvesteyn, H. M. E., Ginn, H. M., Pietila, M. K., Wagner, A., Hattne, J., Grimes, J. M., Hirvonen, E., Evans, G., Parsy, M.-L., Sauter, N. K., Brewster, A. S., Huiskonen, J. T., Stuart, D. I., Sutton, G. & Bamford, D. H., 28 feb. 2018, I: Scientific Reports. 8, 7 s., 3771.

**Shielding and activation of a viral membrane fusion protein**

Halldorsson, S., Li, S., Li, M., Harlos, K., Bowden, T. A. & Huiskonen, J. T., 24 jan. 2018, I: Nature Communications. 9, 1, 9 s., 349.

**Dual Role of a Viral Polymerase in Viral Genome Replication and Particle Self-Assembly**

Sun, X., Ilca, S. L., Huiskonen, J. T. & Poranen, M. M., 2018, I: mBio. 9, 5, 14 s., ARTN e01242-18.

**Unique architecture of thermophilic archaeal virus APBV1 and its genome packaging**

Ptchelkine, D., Gillum, A., Mochizuki, T., Lucas-Staat, S., Liu, Y., Krupovic, M., Phillips, S. E. V., Prangishvili, D. & Huiskonen, J. T., 10 nov. 2017, I: Nature Communications. 8, 6 s., 1436.

**Structural Transitions of the Conserved and Metastable Hantaviral Glycoprotein Envelope**

Rissanen, I., Stass, R., Zeltina, A., Li, S., Hepojoki, J., Harlos, K., Gilbert, R. J. C., Huiskonen, J. T. & Bowden, T. A., nov. 2017, I: Journal of Virology. 91, 21, 11 s., UNSP e00378-17.

**Structures of foot and mouth disease virus pentamers: Insight into capsid dissociation and unexpected pentamer reassociation**

Malik, N., Kotecha, A., Gold, S., Asfor, A., Ren, J., Huiskonen, J. T., Tuthill, T. J., Fry, E. E. & Stuart, D. I., sep. 2017, I: PLoS Pathogens. 13, 9, 14 s., 1006607.

### **Virus found in a boreal lake links ssDNA and dsDNA viruses**

Laanto, E., Mantynen, S., De Colibus, L., Marjakangas, J., Gillum, A., Stuart, D. I., Ravantti, J. J., Huiskonen, J. T. & Sundberg, L.-R., 1 aug. 2017, I: Proceedings of the National Academy of Sciences of the United States of America. 114, 31, s. 8378-8383 6 s.

### **Building bridges between cellular and molecular structural biology**

Patwardhan, A., Brandt, R., Butcher, S. J., Collinson, L., Gault, D., Grunewald, K., Hecksel, C., Huiskonen, J. T., Iudin, A., Jones, M. L., Korir, P. K., Koster, A. J., Lagerstedt, I., Lawson, C. L., Mastronarde, D., McCormick, M., Parkinson, H., Rosenthal, P. B., Saalfeld, S. & Saibil, H. R. och 7 andra, Samtivijai, S., Valero, I. S., Subramaniam, S., Swedlow, J. R., Tudose, I., Winn, M. & Kleywegt, G. J., 6 juli 2017, I: eLife. 6, 11 s., 25835.

### **Rules of engagement between alpha v beta 6 integrin and foot-and-mouth disease virus**

Kotecha, A., Wang, Q., Dong, X., Ilca, S. L., Ondiviela, M., Zihe, R., Seago, J., Charleston, B., Fry, E. E., Abrescia, N. G. A., Springer, T. A., Huiskonen, J. T. & Stuart, D. I., 23 maj 2017, I: Nature Communications. 8, 8 s., 15408.

### **Near-atomic structure of Japanese encephalitis virus reveals critical determinants of virulence and stability**

Wang, X., Li, S.-H., Zhu, L., Nian, Q.-G., Yuan, S., Gao, Q., Hu, Z., Ye, Q., Li, X.-F., Xie, D.-Y., Shaw, N., Wang, J., Walter, T. S., Huiskonen, J. T., Fry, E. E., Qin, C.-F., Stuart, D. I. & Rao, Z., 26 apr. 2017, I: Nature Communications. 8, 9 s., 14.

### **Double-stranded RNA virus outer shell assembly by bona fide domain-swapping**

Sun, Z., El Omari, K., Sun, X., Ilca, S., Kotecha, A., Stuart, D., Poranen, M. M. & Huiskonen, J. T., mars 2017, I: Nature Communications. 8, s. 14814

### **Molecular insights into lipid-assisted Ca<sup>2+</sup> regulation of the TRP channel Polycystin-2**

Wilkes, M., Madej, M. G., Kreuter, L., Rhinow, D., Heinz, V., De Sanctis, S., Ruppel, S., Richter, R. M., Joos, F., Grieben, M., Pike, A. C. W., Huiskonen, J. T., Carpenter, E. P., Kuhlbrandt, W., Witzgall, R. & Ziegler, C., feb. 2017, I: Nature Structural and Molecular Biology. 24, 2, s. 123-+ 10 s.

### **Structure of the polycystic kidney disease TRP channel Polycystin-2 (PC2)**

Grieben, M., Pike, A. C. W., Shintre, C. A., Venturi, E., El-Ajouz, S., Tessitore, A., Shrestha, L., Mukhopadhyay, S., Mahajan, P., Chalk, R., Burgess-Brown, N. A., Sitsapesan, R., Huiskonen, J. T. & Carpenter, E. P., feb. 2017, I: Nature Structural and Molecular Biology. 24, 2, s. 114-+ 12 s.

### **Structure of a phleboviral envelope glycoprotein reveals a consolidated model of membrane fusion**

Halldorsson, S., Behrens, A.-J., Harlos, K., Huiskonen, J. T., Elliott, R. M., Crispin, M., Brennan, B. & Bowden, T. A., 28 juni 2016, I: Proceedings of the National Academy of Sciences of the United States of America. 113, 26, s. 7154-7159 6 s.

### **Editorial overview: Virus structure and assembly: Virions - from structure and physics to design principles**

Zlotnick, A. & Huiskonen, J. T., juni 2016, I: Current opinion in virology. 18, s. VII-VIII 2 s.

### **A Molecular-Level Account of the Antigenic Hantaviral Surface**

Li, S., Rissanen, I., Zeltina, A., Hepojoki, J., Raghvani, J., Harlos, K., Pybus, O. G., Huiskonen, J. T. & Bowden, T. A., 3 maj 2016, I: Cell Reports. 15, 5, s. 959-967 9 s.

### **Low pH and Anionic Lipid-dependent Fusion of Uukuniemi Phlebovirus to Liposomes**

Bitto, D., Halldorsson, S., Caputo, A. & Huiskonen, J. T., 18 mars 2016, I: Journal of Biological Chemistry. 291, 12, s. 6412-6422 11 s.

### **Nucleocapsid assembly in pneumoviruses is regulated by conformational switching of the N protein**

Renner, M., Bertinelli, M., Leyrat, C., Paesen, G. C., de Oliveira, L. F. S., Huiskonen, J. T. & Grimes, J. M., 15 feb. 2016, I: eLife. 5, 12 s., 12627.

Acidic pH-Induced Conformations and LAMP1 Binding of the Lassa Virus Glycoprotein Spike

Li, S., Sun, Z., Pryce, R., Parsy, M.-L., Fehling, S. K., Schlie, K., Siebert, C. A., Garten, W., Bowden, T. A., Strecker, T. & Huiskonen, J. T., feb. 2016, I: PLoS Pathogens. 12, 2, 18 s., 1005418.

**Localized reconstruction of subunits from electron cryomicroscopy images of macromolecular complexes**

Ilca, S. L., Kotecha, A., Sun, X., Poranen, M. M., Stuart, D. I. & Huiskonen, J. T., 4 nov. 2015, I: Nature Communications. 6, 8 s., 8843.

Structure-based energetics of protein interfaces guides foot-and-mouth disease virus vaccine design

Kotecha, A., Seago, J., Scott, K., Burman, A., Loureiro, S., Ren, J., Porta, C., Ginn, H. M., Jackson, T., Perez-Martin, E., Siebert, C. A., Paul, G., Huiskonen, J. T., Jones, I. M., Esnouf, R. M., Fry, E. E., Maree, F. F., Charleston, B. & Stuart, D. I., okt. 2015, I: Nature Structural and Molecular Biology. 22, 10, s. 788-794 7 s.

**Structure of the bacteriophage phi6 nucleocapsid solved to 3.9 angstrom resolution using electron cryomicroscopy**

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Determination of N-linked Glycosylation in Viral Glycoproteins by Negative Ion Mass Spectrometry and Ion Mobility.

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Averaging of Viral Envelope Glycoprotein Spikes from Electron Cryotomography Reconstructions using Jsubtomo

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Structure and Self-Assembly of the Calcium Binding Matrix Protein of Human Metapneumovirus

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Crystal Structure of Venezuelan Hemorrhagic Fever Virus Fusion Glycoprotein Reveals a Class 1 Postfusion Architecture with Extensive Glycosylation

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Isolation and characterization of the positive-sense replicative intermediate of a negative-strand RNA virus

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**Cryo Electron Tomography of Herpes Simplex Virus during Axonal Transport and Secondary Envelopment in Primary Neurons**

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**Eisosome-driven plasma membrane organization is mediated by BAR domains**

Ziolkowska, N. E., Karotki, L., Rehman, M., Huiskonen, J. T. & Walther, T. C., juli 2011, I: Nature Structural and Molecular Biology. 18, 7, s. 854-856 3 s.

**Electron cryotomography of measles virus reveals how matrix protein coats the ribonucleocapsid within intact virions**

Liljeroos, L., Huiskonen, J. T., Ora, A., Susi, P. & Butcher, S. J., 2011, I: Proceedings of the National Academy of Sciences of the United States of America. 108, 44, s. 18085-18090 6 s.

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Huiskonen, J. T., Hepojoki, J., Laurinmaki, P., Vaheri, A., Lankinen, H., Butcher, S. J. & Gruenewald, K., 2010, I: Journal of Virology. 84, 10, s. 4889-4897 9 s.

**Efficient production of Rift Valley fever virus-like particles: the antiviral protein MxA can inhibit primary transcription of bunyaviruses**

Habjan, M., Penski, N., Wagner, V., Spiegel, M., Överby, A. K., Kochs, G., Huiskonen, J. T. & Weber, F., 2009, I: Virology. 385, s. 400-408 9 s.

**Electron cryo-microscopy and single-particle averaging of Rift Valley fever virus: evidence for G<sub>N</sub>-G<sub>C</sub> glycoprotein heterodimers**

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**Insights into bunyavirus architecture from electron cryotomography of Uukuniemi virus**

Överby, A. K., Pettersson, R. F., Gruenewald, K. & Huiskonen, J. T., 2008, I: Proceedings of the National Academy of Sciences of the United States of America. 105, 7, s. 2375-2379 5 s.

**Electron cryomicroscopy comparison of the architectures of the enveloped bacteriophages [phi]6 and [phi]8**

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**Membrane-containing viruses with icosahedrally symmetric capsids**

Huiskonen, J. T. & Butcher, S. J., 2007, I: Current Opinion in Structural Biology. 17, s. 229-236 8 s.

**Structure of a hexameric RNA packaging motor in a viral polymerase complex**

Huiskonen, J. T., Jääliñoja, H. T., Briggs, J. A. G., Fuller, S. D. & Butcher, S. J., 2007, I: Journal of Structural Biology. 158, s. 156-164 9 s.

**Tale of two spikes in bacteriophage PRD1**

Huiskonen, J. T., Manole, V. & Butcher, S. J., 2007, I: Proceedings of the National Academy of Sciences of the United States of America. 104, 16, s. 6666-6671 6 s.



**Structure of the bacteriophage phi6 nucleocapsid suggests a mechanism for sequential RNA packaging**

Huiskonen, J. T., Haas, F. D., Bubeck, D., Bamford, D. H., Fuller, S. D. & Butcher, S. J., 2006, I: Structure. 14, s. 1039-1048 10 s.

**Classification and three-dimensional reconstruction of unevenly distributed or symmetry mismatched features of icosahedral particles**

Briggs, J. A. G., Huiskonen, J. T., Fernando, K. V., Gilbert, R. J. C., Scotti, P., Butcher, S. J. & Fuller, S. D., 2005, I: Journal of Structural Biology. 150, s. 332-339 8 s.

**Membrane proteins modulate the bilayer curvature in the bacterial virus Bam35**

Laurinmäki, P. A., Huiskonen, J. T., Bamford, D. H. & Butcher, S. J., 2005, I: Structure. 13, 12, s. 1819-1828 10 s.

**Structure and assembly of membrane-containing dsDNA bacteriophages**

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**The structure of the bacteriophage PRD1 spike sheds light on the evolution of viral capsid architecture**

Merckel, M. C., Huiskonen, J. T., Bamford, D. H., Goldman, A. & Tuma, R., 2005, I: Molecular Cell. 18, 2, s. 161-170 10 s.

**The PM2 virion has a novel organization with an internal membrane and pentameric receptor binding spikes**

Huiskonen, J. T., Kivelä, H. M., Bamford, D. H. & Butcher, S. J., 2004, I: Nature Structural and Molecular Biology. 11, s. 850-856 7 s.

**Probing the ability of the coat and vertex protein of the membrane-containing bacteriophage PRD1 to display a meningococcal epitope**

Huiskonen, J. T., Laakkonen, L., Toropainen, M., Sarvas, M., Bamford, D. H. & Bamford, J. K. H., 2003, I: Virology. 310, 2, s. 267-279 13 s.

**Minor proteins, mobile arms and membrane-capsid interactions in the bacteriophage PRD1 capsid**

San Martin, C., Huiskonen, J. T., Bamford, J. K. H., Butcher, S. J., Fuller, S. D., Bamford, D. H. & Burnett, R. M., 2002, I: Nature Structural and Molecular Biology. 9, 10, s. 756-763 8 s.

## **Aktiviteter**

**Towards structures of endogenous complexes by cryo-EM**

Huiskonen, J. (!!Keynote speaker)  
17 okt. 2021

**Towards Cryo-EM Structures of Endogenous Complexes**

Huiskonen, J. (!!Speaker)  
22 jan. 2020

**Advances of Cryo-EM in Understanding Macromolecular Structure and Function**

Huiskonen, J. (!!Speaker)  
29 nov. 2019

**Exploring the glycoprotein surface of bunyaviruses**

Huiskonen, J. (!!Keynote speaker)  
1 okt. 2019

**HiLIFE Symposium: Exploring Cellular Complexity by Cryo-EM**

Huiskonen, J. (Ordförande)  
28 feb. 2019

### **Activation of a viral membrane fusion protein**

Huiskonen, J. (!Invited speaker)  
11 dec. 2018

### **Viral dsRNA genome organisation revealed by cryoEM**

Huiskonen, J. (!Invited speaker)  
11 dec. 2018

### **Shielding and Activation of a Viral Membrane Fusion Protein**

Huiskonen, J. (!Invited speaker)  
25 juni 2018

### **EMBO Workshop Membrane Fusion in Health and Disease**

Huiskonen, J. (Medlem av vetenskaplig kommitté)  
24 juni 2018

### **Shielding and activation of viral membrane fusion proteins**

Huiskonen, J. (!Invited speaker)  
27 feb. 2018

### **Shielding and Activation of a Viral Membrane Fusion Protein**

Huiskonen, J. (!Invited speaker)  
19 feb. 2018

### **Insight into viral class II membrane fusion activation by a combined structural biology approach**

Huiskonen, J. (!Invited speaker)  
20 nov. 2017

### **Insight into Rift Valley fever virus membrane fusion activation by a combined structural biology approach**

Huiskonen, J. (!Invited speaker)  
8 sep. 2017

### **Cryo-EM Structure of the TRP channel PC2 involved in Polycystic Kidney Disease**

Huiskonen, J. (!Keynote speaker)  
7 juni 2017

### **Current opinion in virology (Tidskrift)**

Huiskonen, J. (Redaktör) & Zlotnick, A. (Redaktör)  
juni 2016

## **Projekt**

### **BIZEB: Bio-Imaging of Zoonotic and Emerging Bunyaviruses**

Huiskonen, J. (Projektledare)  
European Commission / Horizon 2020  
01/04/2015 → 31/03/2020

### **Center of Excellence in Virus Research (CoE\_VIRRES)**

Bamford, D. H. (Principal Investigator), Bamford, J. (Deltagare), Butcher, S. (Principal Investigator), Oksanen, H. M. (Principal Investigator), Poranen, M. (Principal Investigator), Roine, E. (Principal Investigator), Kainov, D. (Principal Investigator), Tuma, R. (Deltagare), Ravantti, J. (Deltagare), Huiskonen, J. (Deltagare), Jääliñoja, H. (Deltagare), Ora, A. (Deltagare), Hattula, K. (Deltagare), Ziedaite, G. (Deltagare), Romanovskaya, A. (Deltagare), Lisal, J. (Deltagare), Buivydas, A. (Deltagare), Redder, P. (Deltagare), Domanska, A. (Deltagare), Vilen, S. (Deltagare), Manole, V. (Deltagare), Happonen, L. (Deltagare), Seitsonen, J. (Deltagare), Lijeroos, L. (Deltagare), Suchanova, B. (Deltagare), Falck, S. (Deltagare), Daugelavicius, R. (Deltagare), Golubtsov, A. (Deltagare), Yuan, P. (Deltagare), Anastasina, M. (Deltagare),

Karhu, N. J. (Deltagare), Koivunen, M. (Deltagare), Laurinavicius, S. (Deltagare), Wallin, A. (Deltagare), Aalto, A. P. (Deltagare), Sarin, P. (Deltagare), Atanasova, N. (Deltagare), Sun, X. (Deltagare), Pietilä, M. (Deltagare), Krupovic, M. (Deltagare), Cvirkaite-Krupovic, V. (Deltagare), Kukkaro, P. (Deltagare) & Pirttimaa, M. (Deltagare)  
25/02/2011 → 31/12/2016

**ResponseHD: Chaperoninivaste proteiinien väärinlaskostumiseen hermorappeumataudeissa (ResponseHD)**

Huiskonen, J. (Projektledare), Castro, B. (deltagare), Ghanem, M. (deltagare) & Kumpula, E.-P. T. (deltagare)  
Finlands Akademi  
01/09/2022 → 31/08/2026

**SEMMA: Endogeenisten makromolekyylikompleksien rakenteet**

Huiskonen, J. (Projektledare), Eshriew, E. K. (deltagare) & Kumpula, E.-P. T. (deltagare)  
Suomen Akatemia Projektilaskutus  
01/09/2018 → 31/08/2022

**Huiskonen BF 2025-26**

Huiskonen, J. (Projektledare), Kousar, A. (deltagare) & Lu, X. (deltagare)  
Innovaatorahoituskeskus Business Finland (FinELib)  
01/01/2025 → 31/12/2026

**Huiskonen BF 25-26**

Huiskonen, J. (Projektledare)  
Business Finland Oy  
01/01/2025 → 01/01/2025

**Huiskonen Erko 2024-2027**

Huiskonen, J. (Projektledare), Poranen, M. (Projektledare), Eshriew, E. K. (deltagare), Sah Teli, S. K. (deltagare), Song, X. (deltagare) & Sun, X. (deltagare)  
Jane ja Aatos Erkon säätiö  
01/11/2024 → 31/10/2027

**CellCargo: Huiskonen JAES**

Huiskonen, J. (Projektledare), Green, M. (deltagare), Lu, X. (deltagare), Nordlin, K. P. (deltagare), Sah Teli, S. K. (deltagare) & Song, X. (deltagare)  
Jane ja Aatos Erkon säätiö  
01/09/2021 → 31/08/2024

**ConnexinCode: Huiskonen Jusélius 2022 1/3**

Huiskonen, J. (Projektledare), Eshriew, E. K. (deltagare), Green, M. (deltagare) & Saavalainen, A. (deltagare)  
Sigrid Juséliuksen Säätiö @003701165704@  
01/05/2022 → 30/04/2025

**Huiskonen Syöpäsäätiö 2025**

Huiskonen, J. (Projektledare) & Castro, B. (deltagare)  
Syöpäsäätiö sr Cancerstiftelsen sr  
01/01/2025 → 31/12/2026

**Huiskonen VolkswagenStiftung**

Huiskonen, J. (Projektledare), Castro, B. (deltagare), Eshriew, E. K. (deltagare), Jayachandran, R. B. (deltagare) & Song, X. (deltagare)  
VolkswagenStiftung  
01/01/2021 → 31/12/2023

**Mechanism of antagonist**

Huiskonen, J. (Projektledare) & Castro, B. (deltagare)  
Syöpäsäätiö sr Cancerstiftelsen sr  
01/01/2024 → 28/02/2025

**iCoin: SARS-koronavirus-2 -infektion estäjät**

Huiskonen, J. (Projektledare), Castro, B. (deltagare), Hannula, L. (deltagare), Kant, R. (deltagare), Kumpula, E.-P. T. (deltagare) & Rissanen, I. (deltagare)  
SUOMEN AKATEMIA Vähäkylä Leena  
01/01/2020 → 31/12/2022

**EndoGap: Sigrid Juséliuksen säätiö 2019-22 H9702**

Huiskonen, J. (Projektledare) & Eshriew, E. K. (deltagare)  
Sigrid Juséliuksen Säätiö @003701165704@  
01/05/2019 → 31/12/2023

**University profiling funding 7 InterEarth RESET**

Airavaara, M. (Projektledare), Heiskanen, J. (Projektledare), Huiskonen, J. (Projektledare), Hyvärinen, M. (Projektledare), Kulmala, M. (Projektledare), Kulmala, M. (Projektledare), Mervaala, E. (Projektledare), Mäkelä, J. (Projektledare), Primmer, C. (Projektledare), Räsänen, A. (Projektledare), Sironen, T. (Projektledare), Toivonen, R. (Projektledare), Aalto, P. (deltagare), Ahonen, L. (deltagare), Alakukku, L. (deltagare), Auvinen, P. (deltagare), Betz-Heinemann, A. (deltagare), Citterico, M. (deltagare), Ecke, F. (deltagare), El Wali, M. (deltagare), Eronen, J. T. (deltagare), Fuentenebro Alonso, P. (deltagare), Gammal, J. (deltagare), Green, S. (deltagare), Haaranen, D. A. P. (deltagare), Heikinheimo, A. (deltagare), Heinonen, M. (deltagare), Heinonen, S. (deltagare), Hohti, R. (deltagare), Holopainen, M. (deltagare), Hyytiäinen, K. (deltagare), Jokiranta, J. (deltagare), Kaartinen, T. (deltagare), Karhu, K. (deltagare), Kaukonen, M. (deltagare), Kempainen, J. (deltagare), Kerminen, V.-M. (deltagare), Kiljunen, S. (deltagare), Kolari, P. (deltagare), Korpela, K. (deltagare), Korsunova-Tsaruk, A. (deltagare), Koskinen, M. (deltagare), Lajunen, A. (deltagare), Lampilahti, J. (deltagare), Lehto, K.-M. (deltagare), Lewandowska, A. (deltagare), Lindholm, T. M. (deltagare), Lindroos, M. (deltagare), Lintunen, A. (deltagare), Luomanen, P. (deltagare), Lyu, Y. (deltagare), Mappes, J. (deltagare), Mietola, R. (deltagare), Mühleip, A. W. (deltagare), Nordström, M. C. (deltagare), Norkko, J. (deltagare), Omija Korpela, J. A. (deltagare), Paasonen, P. (deltagare), Pietikäinen, J. (deltagare), Pihlatie, M. (deltagare), Poupart, T. A. (deltagare), Pylkkö, T. (deltagare), Raivonen, M. (deltagare), Rasmus, L. S. (deltagare), Ruohomäki, A. I. (deltagare), Ryhti-Laine, K. (deltagare), Saari, T. (deltagare), Sadeghibagherabadi, A. (deltagare), Sandström, V. (deltagare), Sikanen, T. (deltagare), Siven, M. (deltagare), Spisak, S. M. (deltagare), Su, X. (deltagare), Syrjä, P. (deltagare), Taira, T. (deltagare), Tani, S. (deltagare), Tanskanen, T. T. (deltagare), Tatti, N. (deltagare), Thomas, D. N. (deltagare), Tiira, T. (deltagare), Toppinen, A. (deltagare), Uimari, P. (deltagare), Uusitalo, J. A. (deltagare), Vainio, A. (deltagare), Varjosalo, M. (deltagare), Vartiainen, M. (deltagare), Veikkolainen, T. (deltagare) & Zaidan, M. A. (deltagare)  
Finlands Akademi, Suomen Akatemia Projektilaskutus  
01/01/2023 → 31/12/2028