

Recruiting the best

Professor Anders Malthe-Sørenssen Department of Physics, University of Oslo Director, Center for Computing in Science Education Director, Center for Interdisciplinary Education



HORIZON 2020



CompSci is a MSCA COFUND 5-year program with 32 PhD positions of 36 months each with two calls over the program period.

The program includes 37 supervisors as UiO, 34 partners across sectors, and has 48 projects (of which 32 will be funded).

The overall budget of COMPSC is €8,623,872, of which € 2,603,520 (30%) are requested by the EC and 6,020,352 (70%) are covered by UiO.



HORIZON 2020



Vision

Train a new generation of computationally proficient researchers across the disciplines in mathematics and natural sciences





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Vision

Train a new generation of computationally proficient researchers across the disciplines in mathematics and natural sciences

Institutional goals

Develop a pilot for a cohort-driven PhD programs Systematic training in transferable skills in PhD programs Strengthen our cross-disciplinary community



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Call 1 Jan 3, 2021 15 PhD students

Call 2 Feb 1, 2022 15 PhD students **Call 2b** Jun 1, 2022 1 PhD students



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Selection process (Call 2, Feb 1, 2022)





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Application process







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This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie

Skłodowska-Curie grant agreement No 945371.

----CompSci

Call 01 – 2021-2024

Call 02 – 2022-2025

Project description; Main supervisor; Computational supervisors (Potential international partner for visits)	Project description; Main supervisor; Computational supervisors (Potential international partner for visits)
Chemistry Secondments: Haldor Topsøe, AstraZeneca, StartupLab	Chemistry Secondments: Haldor Topsøe, AstraZeneca, StartupLab
Computational study of CO2 conversion reactions in multivariate metal organic frameworks; Nova, Olsbye (U. Barc	Mechanistic study of CO ₂ hydrogenation reactions using microkinetic modelling; <i>Nova</i> , <i>Tilset (ICIQ, Spain)</i>
Kinetic measurements, atomistic and kinetic modeling of reactions in confined space; Olsbye, Svelle (Karlruhe-IT)	Ab initio MD for accurate descriptions of entropy and degradation of nanoporous catalysts; Svelle; Cascella (Ghent
Efficient implementation of hybrid particle field/MD for the exa-scale; <i>Cascella</i> , <i>Pedersen (Ghent Univ., Belgium)</i>	Spectroscopic studies of porous catalysts and reaction mechanisms, <i>Bordiga</i> , <i>Svelle (Univ. or Torino, Italy)</i>
Catalyst Discovery by Combining Computational Chemistry with Machine Learning; Balcells, De Bin (Virg. Tech, C	Molecular Noninteracting Kinetic Energy by Machine Learning; <i>Helgaker, Kvaal (Univ. of Nottingham, UK)</i>
Acceleration of Many-Electron Attosecond Dynamics Simulations; <i>Pedersen</i> , <i>Kvaal (Virg. Tech, USA)</i>	Development of density-functional methods utilizing tensor densities; Tellgren, Helgaker (Max Planck SD, German
Bioscience Secondments: I: DNV GL, Thermo Fisher, Oslo University Hospital, Cognite, StartupLab	Bioscience Secondments: I: DNV GL, Thermo Fisher, Oslo University Hospital, Cognite, StartupLab
Large scale recordings of neurons to reveal mechanisms of learning and memory; Fyhn, Malthe-Sørenssen (Simula/	Molecular modeling of neural mechanisms of brain plasticity; Malthe-Sorenssen, Einevoll (Allen Brain Inst, USA)
Large scale simulation of neural networks from mouse visual cortex; <i>Einevoll</i> , <i>Fyhn (UCSD, USA)</i>	Deep learning from spiking neuron networks; <i>Einevoll</i> , Malthe-Sørenssen (UCSD, USA)
Bio-inspired neural network for navigation; Malthe-Sørenssen, Einevoll (Juhlich, Germany)	Computational disambiguation of cell type and cell state in single cell RNA-seq data; Hazen, Einevoll (UCSD, USA
Modeling systems levels changes in brain aging induced by genome instability; Nilsen, Einevoll (USCD, USA)	Artificial and biological neural networks in cognitive tasks; Fyhn, Malthe-Sørenssen (Allen Brain Inst., USA)
Geoscience Secondments: ESRF, Cognite, DNV GL, LTDS, Expert Analytics, StartupLab	Geoscience Secondments: ESRF, Cognite, DNV GL, LTDS, Expert Analytics, StartupLab
Variable mesh Earth System Models on cloud platforms for high latitude volcanic eruptions; Kruger, Storelvmo (MI	Optimization, minimum energy states, ocean atmosphere stratification; Lacasce, Hjorth-Jensen (Utrecht Univ., Net
Modelling microscale atmospheric turbulence in the surface layer; Berntsen, Lacasce (Utre	in ocean & atmosphere in satellite data and simulations; Isachsen, Storelvmo (Utrecht U
Role of anisotropic viscosity for computational modeling of convection in the Earth's mant Candidates	prioritize up ntraplate volcanism using the observed distribution of seamounts; Gaina, Conrad (ELSI
Computational modeling of hydrogen diffusion along slip planes in upper mantle silicates;	n mantle diffusion and viscosity with geodynamic implications; Caracas, Gaina (Montp
Strain localization in rocks: machine learning analysis of X-ray tomography data; <i>Renard</i> , to 3 resea	rch projects arning based simulations of dynamic fracture in rocks; Jamtveit, Malthe-Sørenssen (ORN)
Incorporating real-time datastreams in modeling the state of the Arctic cryosphere; <i>Kääb</i> , S	stic instabilities using machine learning; Angheluta, Malthe-Sørenssen (ORNL, USA)
Physics Secondments: Thermo Fisher, Expert Analytics, Cognite, DNV GL, StartupLab	Physics Secondments: Thermo Fisher, Expert Analytics, Cognite, DNV GL, StartupLab
Frictional properties of surface structures generated by machine-learning; Malthe-Sørenssen, Hjorth-Jensen (LTDS,	First-principle simulations of nanoscale geological processes; Malthe-Sørenssen, Angheluta (Univ. Tennessee, Kno
Mesoscale modelling of turbulence and swarming behaviour in soft active matter; Angheluta, Malthe-Sørenssen (Or	Machine-learning-based molecular modeling of nanoscale geological processes; Malthe-Sorenssen, Hjorth-Jensen
Measurement and mechanistic modelling of 3D cell migration; Dysthe, Malthe-Sørenssen (Univ. Grenoble, France)	Differentiation and mineralization in biomimetic hydrogels: microfluidics and modelling; Dysthe, Angheluta (LTDS
Quantum information theories and quantum many-body methods; Hjorth-Jensen, Kvaal (Univ. Tennessee, Knoxv.,	Deep-learning based analysis and modeling of cell differentiation pathways; Scholz, Dysthe (Univ. Grenoble, France
Astronomy Secondments: LockheedMartin, JPL, Expert Analytics, StartupLab	Supervised and unsupervised machine learning approaches to quantum many-body methods; Hjorth-Jensen, Kvaal
Massive parallelization of end-to-end CMB analysis codes; Eriksen, Wehus (JPL/Caltech, USA)	Astronomy Secondments: LockheedMartin, JPL, Expert Analytics, StartupLab
Simulations of galaxy formation: interplay between baryonic feedback and dark matter models; Shen, Cicone (Cami	WholeSun: New codes and frameworks for exascale computing for multi-scale simulations; Carlsson, Gudiksen (Carlsson)
Mathematics Secondments: DNV GL, Expert Analytics, Torus Actions, StartupLab	Interpretation of solar observations, using Deep Learning; Rouppe van der Voort, Pereira (Lockheed-Martin, USA)
Statistical learning method for chemistry applications; <i>de Bin</i> , Ballcels (Univ. Bonn, Germany)	Mathematics Secondments: DNV GL, Expert Analytics, Torus Actions, StartupLab
Deep reinforcement learning for industrial applications: taking flow control to the real world: Jensen, Rabault (Lanc	Deep learning observables of solutions of nonlinear hyperbolic partial differential equations; Fjordholm, Frigessi (A
Utilizing covariate information in recommender systems; Scheel, Frigessi (Lancaster Univ., UK)	Backtracking gradient descent-based algorithms to defend DNNs against adversarial attacks; Truong, Hansen (Cam



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Written evaluation – applications



3 experts evaluate each candidate using an evaluation rubric

All experts in **one discipline** coordinate their evaluations in a meeting

A ranking of candidates for each of the 24 projects

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Project description; Main supervisor; Computational supervisors (Potential international partner for visits) Secondments: Haldor Topsøe, AstraZeneca, StartupLab Chemistry Computational study of CO₂ conversion reactions in multivariate metal organic frameworks: Nova. Olsbve (U. Barc Kinetic measurements, atomistic and kinetic modeling of reactions in confined space; Olsbye, Svelle (Karlruhe-IT) Efficient implementation of hybrid particle field/MD for the exa-scale; Cascella, Pedersen (Ghent Univ., Belgium) Catalyst Discovery by Combining Computational Chemistry with Machine Learning; Balcells, De Bin (Virg. Tech, Acceleration of Many-Electron Attosecond Dynamics Simulations; Pedersen, Kvaal (Virg. Tech, USA) Bioscience Secondments: I: DNV GL, Thermo Fisher, Oslo University Hospital, Cognite, StartupLab Large scale recordings of neurons to reveal mechanisms of learning and memory; Fyhn, Malthe-Sørenssen (Simula/ Large scale simulation of neural networks from mouse visual cortex; *Einevoll*, Fyhn (UCSD, USA) Bio-inspired neural network for navigation: Malthe-Sorenssen, Einevoll (Juhlich, Germany) Modeling systems levels changes in brain aging induced by genome instability; Nilsen, Einevoll (USCD, USA) Secondments: ESRF, Cognite, DNV GL, LTDS, Expert Analytics, StartupLab Geoscience Variable mesh Earth System Models on cloud platforms for high latitude volcanic eruptions; Kruger, Storelvmo (MI Modelling microscale atmospheric turbulence in the surface layer; Berntsen, Lacasce (Utrecht Univ., Netherlands) Role of anisotropic viscosity for computational modeling of convection in the Earth's mantle; Conrad, Kiraly (ELSI Computational modeling of hydrogen diffusion along slip planes in upper mantle silicates; Caracas, Conrad (Montp Strain localization in rocks: machine learning analysis of X-ray tomography data; Renard, Cordonnier (ESRF) Incorporating real-time datastreams in modeling the state of the Arctic cryosphere; Kääb, Schuler (Geosci. Montpell Physics Secondments: Thermo Fisher, Expert Analytics, Cognite, DNV GL, StartupLab Frictional properties of surface structures generated by machine-learning; Malthe-Sorenssen, Hjorth-Jensen (LTDS, Mesoscale modelling of turbulence and swarming behaviour in soft active matter; Angheluta, Malthe-Sørenssen (Ol Measurement and mechanistic modelling of 3D cell migration; Dysthe, Malthe-Sørenssen (Univ. Grenoble, France) Quantum information theories and quantum many-body methods; Hjorth-Jensen, Kvaal (Univ. Tennessee, Knoxv., Secondments: LockheedMartin, JPL, Expert Analytics, StartupLab Astronomy Massive parallelization of end-to-end CMB analysis codes; Eriksen, Wehus (JPL/Caltech, USA) Simulations of galaxy formation: interplay between baryonic feedback and dark matter models; Shen, Cicone (Cam. Mathematics Secondments: DNV GL, Expert Analytics, Torus Actions, StartupLab Statistical learning method for chemistry applications; de Bin, Ballcels (Univ. Bonn, Germany) Deep reinforcement learning for industrial applications: taking flow control to the real world: Jensen, Rabault (Land Utilizing covariate information in recommender systems; Scheel, Frigessi (Lancaster Univ., UK)



Written evaluation – expert panels



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Written evaluation – expert panels

Application Evaluation panel Consensus meetings Rankings 24 projects

International experts have been recruited by project supervisors

3 experts evaluate each candidate using an evaluation rubric

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Written evaluation – expert panels



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CompSci – Independent Expert Evaluation Form – Call 1

Please save the filled in document with a file name including your name as well as the candidate's name e.g. Evaluation Call 1_YOUR SURNAME_CANDIDATE's SURNAME

PANEL	
NAME OF CANDIDATE	
NAME OF EVALUATOR	

Criterion	Score Research project Priority 1 (0-5) ¹	Score Research project Priority 2 (0-5)	Score Research project Priority 3 (0-5)
1. CV, degree and skills			
Grades, track record, publications and presentations, student should be in the top 25% of their respective grading			
system			
2. Motivation letter			
motivation motivation and interdisciplinary			
3. Match with topic			
Relevance of education, thesis, and courses			
4. Reference letter			
Statement of relative rank in cohort			
Total score for all criteria (max. 20)			

Comments to the score:

<u>CompSci</u> – Assessment rubric for evaluation of written materials

Criterion	Factors			Threshold	Weight
CV, degree and	Grades, track	record, publications and presentation	ons,		
skills student shoul		d be in the top 25% of their respecti	ve	3	45%
	grading syster	n			
Score:	5	Score: 3		Score: 1	
Exceptional candid	ate relative	Strong candidate relative to the		candidate rela	tive to
to the level in the field (top 5%).		level in the field (ton 25%)	the level in the field (top 50%) Background from an average national program.		
		Background from a very good			
national/very good international		national program/international			
educational progra	m.	program.	national programm		
May have top resul	ts from	May have good results from			
national/internatio	nal rankings,	national/international rankings			
competitions.		or competitions.			
Motivational letter	Scientific mat	urity motivation and interdisciplina	nv.		
worwarionarietter	motivation	anty, motivation and interdisciplina	''	2	15%
Franci	E	Secret 2		Secret 1	
Score.		30012.3	-	Score: 1 Does not demonstrate a	
Demonstrates stro	ng scientific	Demonstrates scientific	Does not		
maturity and strong	g motivation	understanding and motivation	scientific understanding of the field and does not provide a motivating for purusing a PhD or participating in the CompSci		
for pursuing a PhD	and	for pursuing a PhD and			
participating in the	compsci	program			
program. Provides clear motivation for		Provides some motivation for	program		
interdisciplinary work with		interdisciplinary work possibly	Provides weak or no motivation		
examples from own experience.		with example from own	for interdisciplinary work with		
		experience.	little own experience.		
Match with topic	Relevance of e	education, thesis, and courses			2001
				3	30%
Score:	5	Score: 3		Score: 1	
Education, thesis a	nd courses	Education, thesis and courses	Educatio	n, thesis and o	ourses
provides an excelle	nt	provides an acceptable does not		t provide a sufficient	
background for the specific		background for the specific backgro		und for the specific	
project.		project.	project.		
Reference letter	Statement of	relative rank in cohort			
				2	10%
Score:	5	Score: 3		Score: 1	
Candidate described as in top 5% of cohort. Letter explicitely states that student has demonstrated experience in interdisciplinary work.		Candidate described as in ton	Candidate described as top 50		s top 50%
		25% of cohort.	of cohort	nort.	

Written evaluation – consensus meeting



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A ranking of candidates for each of the 24 projects

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Written evaluation – ranking per discipline



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Project description; Main supervisor; Computational supervisors (Potential international partner for visits) Chemistry Secondments: Haldor Topsøe, AstraZeneca, StartupLab Computational study of CO₂ conversion reactions in multivariate metal organic frameworks: Nova. Olsbve (U. Barc Kinetic measurements, atomistic and kinetic modeling of reactions in confined space; Olsbye, Svelle (Karlruhe-IT) Efficient implementation of hybrid particle field/MD for the exa-scale; Cascella, Pedersen (Ghent Univ., Belgium) Catalyst Discovery by Combining Computational Chemistry with Machine Learning; Balcells, De Bin (Virg. Tech, Acceleration of Many-Electron Attosecond Dynamics Simulations; Pedersen, Kvaal (Virg. Tech, USA) Secondments: I: DNV GL, Thermo Fisher, Oslo University Hospital, Cognite, StartupLab Bioscience Large scale recordings of neurons to reveal mechanisms of learning and memory; Fyhn, Malthe-Sørenssen (Simula/ Large scale simulation of neural networks from mouse visual cortex; *Einevoll*, Fyhn (UCSD, USA) Bio-inspired neural network for navigation: Malthe-Sorenssen, Einevoll (Juhlich, Germany) Modeling systems levels changes in brain aging induced by genome instability; Nilsen, Einevoll (USCD, USA) Secondments: ESRF, Cognite, DNV GL, LTDS, Expert Analytics, StartupLab Geoscience Variable mesh Earth System Models on cloud platforms for high latitude volcanic eruptions; Kruger, Storelvmo (MI Modelling microscale atmospheric turbulence in the surface layer; **Berntsen**, Lacasce (Utrecht Univ., Netherlands) Role of anisotropic viscosity for computational modeling of convection in the Earth's mantle; Conrad, Kiraly (ELSI Computational modeling of hydrogen diffusion along slip planes in upper mantle silicates; Caracas, Conrad (Montp Strain localization in rocks: machine learning analysis of X-ray tomography data; Renard, Cordonnier (ESRF) Incorporating real-time datastreams in modeling the state of the Arctic cryosphere; Käüb, Schuler (Geosci. Montpell Physics Secondments: Thermo Fisher, Expert Analytics, Cognite, DNV GL, StartupLab Frictional properties of surface structures generated by machine-learning; Malthe-Sorenssen, Hjorth-Jensen (LTDS, Mesoscale modelling of turbulence and swarming behaviour in soft active matter; Angheluta, Malthe-Sørenssen (Ol Measurement and mechanistic modelling of 3D cell migration; Dysthe, Malthe-Sørenssen (Univ. Grenoble, France) Quantum information theories and quantum many-body methods; Hjorth-Jensen, Kvaal (Univ. Tennessee, Knoxv., Astronomy Secondments: LockheedMartin, JPL, Expert Analytics, StartupLab Massive parallelization of end-to-end CMB analysis codes; Eriksen, Wehus (JPL/Caltech, USA) Simulations of galaxy formation: interplay between baryonic feedback and dark matter models; Shen, Cicone (Cand Mathematics Secondments: DNV GL, Expert Analytics, Torus Actions, StartupLab Statistical learning method for chemistry applications; de Bin, Ballcels (Univ. Bonn, Germany) Deep reinforcement learning for industrial applications: taking flow control to the real world: Jensen, Rabault (Lanc Utilizing covariate information in recommender systems; Scheel, Frigessi (Lancaster Univ., UK)







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Interview with expert panel + supervisors

CompSci – Questions for structured interviews

Time	Element		
2 min	Introduction Supervisor wishes candidate welcome, introduces participants, and outlines the interview		
15 min	Scientific presentation Goal: Assess scientific maturity and vision		
	Q1.1: Please provide a 7 minute presentation of a scientific project you have worked on. You may share slides if you want to.		
	Q1.2: (Committee members asks 1-2 scientifically relevant questions to the talk)		
	Q1.3: Briefly describe your role in the research project? (Address: who provided scientific ideas, was it a team work or an independent project, how was supervision organized)		
	(Optional) Q1.4: What did you learn from participating in this project?		
10 min	CV presentation and match with topic Goal: Assess background and motivation for research project		
	Q2.1: Please briefly describe how your background is relevant for the research project		
	Q2.2: Briefly explain your motivation for the research project		
10 min	Team work experience and interdisciplinary motivation Goal: Assess independence, initiative, collaboration and interdisciplinary experience		
	(Intro by supervisor): In this project you will work with a team of researchers on the research project, and you will be part of a larger cohort of other PhD students.		
	Q3.1: Can you give an example of a situation where you have worked in a team with other researchers to achieve a common goal and what did you learn from this collaboration?		
	Q3.2: Can you give an example of a situation where you have worked across disciplines and what did you learn from this collaboration?		
	Q3.3: What is your motivation to apply for the CompSci program and how will you contribute to the success of the program and of the other students in the program?		
	(Optional) Q3.4: Why should we choose you for this project?		
	(Optional) Q3.5: Provide an example of a project where you did not succeed and how you handled that situation.		
5 min	Questions from the candidate		
	Q4.1: Do you have any questions about the program, the project or the process?		

<u>CompSci</u> – Assessment rubric for interviews

itt	erion	Factors			Threshold	Weight
ie es	ntific sentation	Presentation a (e.g. MSc) or re Criteria: Scient in a scientific o	bout previously carried out research elevant work experience. ific maturity and vision; ability to ta liscussion; Oral English skills	work ake part	3	50%
	Score:	5	Score: 3		Score: 1	
	Demonstrates a scientific unders oversight Excellent presen research project Very mature refi the scientific wo Excellent oral En	mature standing and station of the s. lections on rk process. Iglish skills.	 Demonstrates reasonable scientific understanding. Good presentation of the research project. Reflects on the scientific work process. Good oral English skills. 	 Does not demonstrate a scientific understanding. Weak presentation of the research project. Does not reflect on the scientific work process. Weak oral English skills. 		
/ presentation CV presentatio dd match with Criteria: Abiliti pic research topic courses		CV presentatic Criteria: Abilit research topic courses	on and how candidate match with topic y to reflect on and match background to : i.e. relevance of education, thesis and		3	30%
	Score:	5	Score: 3		Score: 1	
	Maturely reflect background qua project and the program. Demonstrates ei understanding o research project	s on how lifies for the CompSci xcellent of the t.	 Good reflection on background and how it qualifies for the project and the CompSci program. Demonstrates good understanding of the research project. 	 Weak reflection on how bacground qualifies for the project and the CompSci program. Demonstrates weak understanding of the research project. 		
a	m work	Team work ex Criteria: Initiat motivation	perience and interdisciplinary motiv ive to contribute, interdisciplinary	vation	3	20%
	Score: !	5	Score: 3		Score: 1	
	Mature reflection team work exper- examples from or experience. Provides clear m interdisciplinary examples from or experience. Provides an excer motivation for th program and for	on on own rience with own hotivation for work with own ellent he CompSci r pursuing a	 Some reflection on own team work experience possibly with example from own experience. Provides some motivation for interdisciplinary work possibly with example from own experience. Provides a good motivation for the CompSci program and for pursuing a PhD. 	 No rework Provision motivity Provision motivity Provision motivity 	flection on ov experience. des weak or n ration for disciplinary wo own experien des weak of n ration for the am or for pur:	o o ork with ce. o CompSci suing a



Skłodowska-Curie grant agreement No 945371.

Final ranking by selection committee

24 candidates ranked by selection committee based on the applications, reports from written evaluation and reports from interviews.

Selection committee: 1 expert from each discipline + 1 new international expert + dean of research + project coordinator

Offers given to 2/3 of candidates within each discipline

Offers submitted by university administration

Challenge: some students declined the offered positions.



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Chemistry Secondments: Haldor Topsøe, AstraZeneca, StartupLab			
Computational study	of CO2 conversion reactions in multivariate metal organic frameworks; Nova, Olsbye (U. Barc		
Kinetic measurements, atomistic and kinetic modeling of reactions in confined space; <i>Olsbye</i> , <i>Svelle (Karlruhe-IT)</i>			
Efficient implementat	ion of hybrid particle field/MD for the exa-scale; <i>Cascella</i> , <i>Pedersen (Ghent Univ., Belgium)</i>		
Catalyst Discovery by Combining Computational Chemistry with Machine Learning; Balcells, De Bin (Virg. Tech,			
Acceleration of Many	-Electron Attosecond Dynamics Simulations; Pedersen, Kvaal (Virg. Tech, USA)		
Bioscience	Secondments: I: DNV GL, Thermo Fisher, Oslo University Hospital, Cognite, StartupLab		
Large scale recording	s of neurons to reveal mechanisms of learning and memory; Fyhn, Malthe-Sørenssen (Simula/		
Large scale simulation	n of neural networks from mouse visual cortex; <i>Einevoll</i> , <i>Fyhn (UCSD, USA)</i>		
Bio-inspired neural neural	etwork for navigation; Malthe-Sorenssen, Einevoll (Juhlich, Germany)		
Modeling systems lev	els changes in brain aging induced by genome instability; Nilsen, Einevoll (USCD, USA)		
Geoscience	Secondments: ESRF, Cognite, DNV GL, LTDS, Expert Analytics, StartupLab		
Variable mesh Earth	System Models on cloud platforms for high latitude volcanic eruptions; Kruger, Storelvmo (MI		
Modelling microscale	atmospheric turbulence in the surface layer; <i>Berntsen</i> , <i>Lacasce (Utrecht Univ., Netherlands)</i>		
Role of anisotropic vi	scosity for computational modeling of convection in the Earth's mantle; Conrad, Kiraly (ELSI		
Computational model	ing of hydrogen diffusion along slip planes in upper mantle silicates; Caracas, Conrad (Montp		
Strain localization in	rocks: machine learning analysis of X-ray tomography data; <i>Renard</i> , Cordonnier (ESRF)		
Incorporating real-tim	he datastreams in modeling the state of the Arctic cryosphere; Kääb, Schuler (Geosci. Montpell		
Physics	Secondments: Thermo Fisher, Expert Analytics, Cognite, DNV GL, StartupLab		
Frictional properties of	of surface structures generated by machine-learning; Malthe-Sorenssen, Hjorth-Jensen (LTDS,		
Mesoscale modelling of turbulence and swarming behaviour in soft active matter; Angheluta, Malthe-Sørenssen (O			
Measurement and mechanistic modelling of 3D cell migration; Dysthe, Malthe-Sørenssen (Univ. Grenoble, France)			
Quantum information theories and quantum many-body methods; Hjorth-Jensen, Kvaal (Univ. Tennessee, Knoxv.,			
Astronomy	Secondments: LockheedMartin, JPL, Expert Analytics, StartupLab		
Massive parallelization	on of end-to-end CMB analysis codes; Eriksen, Wehus (JPL/Caltech, USA)		
Simulations of galaxy formation: interplay between baryonic feedback and dark matter models; Shen, Cicone (Cam			
Mathematics	Secondments: DNV GL, Expert Analytics, Torus Actions, StartupLab		
Statistical learning me	ethod for chemistry applications; de Bin, Ballcels (Univ. Bonn, Germany)		
Deep reinforcement learning for industrial applications: taking flow control to the real world: Jensen, Rabault (Land			
Utilizing covariate information in recommender systems; Scheel, Frigessi (Lancaster Univ., UK)			







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