

Annual report 2020

**Danish Institute
for Advanced Study**

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Table of Contents



- Director's Note.....4
- Organization Diagram 5
- Portraits of DIAS Fellows:..... 6
 - James Rogers 6
 - Marco Ragni8
 - Changzhu Wu..... 10
 - Joel Cox 12
 - Angela Y. Chang 16
- All DIAS Affiliates:18
 - Fellows 18
 - Chairs.....32
 - Senior Fellows.....42
- Top-10 Publications 46
- External Funding of Research Projects..... 50
- Research Support..... 52
- Hiring Plan 53
- Activities:..... 54
 - Lectures 54
 - Other Activities 56
 - Awards 57
- Communication Strategy 58
- Administration: 62
 - Articles of Association and Funding..... 62
 - Staff 63
- Publications by DIAS Fellows in 2019 64



Director's

Note

By Marianne Holmer,
Director of DIAS

Having been Director of DIAS for about a year now, I can honestly say it's been an incredibly exciting period with both ups and downs. We got off to a great start in March 2020 when we moved into our brand-new DIAS House. Unfortunately, it coincided with the lockdown of Denmark as a result of the COVID-19 pandemic. Since then, it has been quite a challenge to keep DIAS running due to many cancellations, often at the very last minute. Despite an indomitable will and enthusiasm to get activities up and running in DIAS, it has been difficult to materialise our ambitions for DIAS.

The whole idea behind DIAS is to develop a strong interdisciplinary environment at SDU by featuring the finest researchers at SDU and using inspiration from excellent external researchers. Online lectures contribute to knowledge sharing just like other online ac-

tivities. However, the fact remains that physical encounters are the best way to exchange knowledge and generate new ideas. Such encounters have only been possible to a very limited extent and the potential is far from utilised.

The DIAS House offers every opportunity to interact, thanks to a large auditorium, one large and several small meeting rooms, many informal meeting places and our wonderful roof terrace. The young fellows benefit greatly from each other and work together across their fields of study. Also, a lot of effort has been made in terms of onboarding new fellows at DIAS. There's no end to their ingenuity when it comes to finding new ways to strengthen the collaboration and continue research activities. Online workshops and conferences are also being arranged. From 2021, funds will be earmarked for research activities in DIAS, and several projects are currently under development.

Recruitment of researchers to DIAS continues to be a success with many highly qualified applicants from around the world. Four new fellows have been hired this year – three from the Faculty of Health Sciences and one from the Faculty of Humanities, and we have posted three job vacancies. This year, several of our fellows have received prestigious personal grants from public and private foundations, which testifies to their high quality and exciting ideas. Two fellows have been permanently employed at SDU, while one

fellow has secured a permanent position at a university abroad.

Since joining DIAS, one of my main focus points has been writing down and sharing procedures with stakeholders, as well as making transparent processes for special appointments and appointments to councils and committees. DIAS covers all of SDU, and the affiliates of DIAS are employed at departments which have the day-to-day staff responsibility. It's important that fellows are offered as similar conditions as possible across SDU, so that they can meet the expectations of DIAS Fellows to contribute to the interdisciplinary research at SDU at an excellent level.

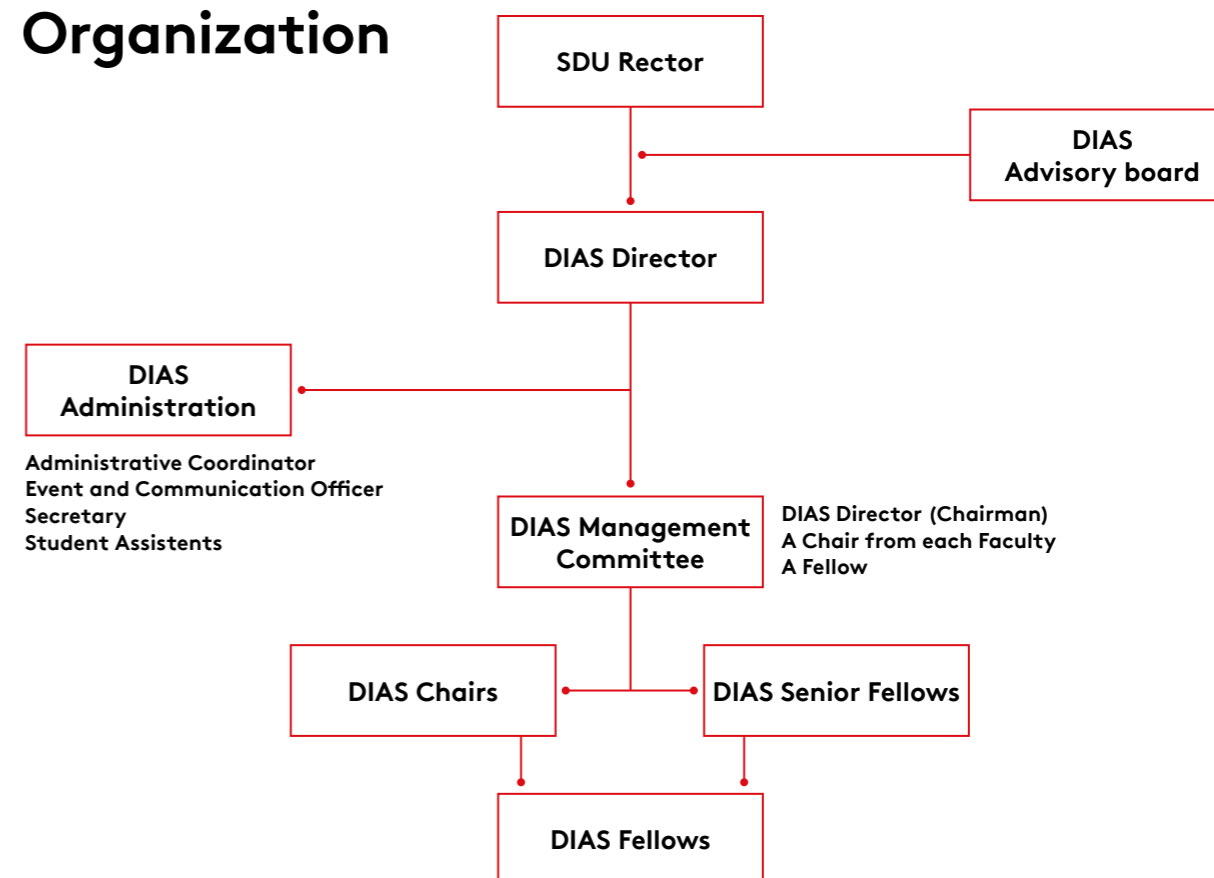
We have also worked on defining the role of being a mentor for DIAS Fellows in order to ensure a qualified onboarding of new fellows. There are many different challenges in establishing oneself as an independent researcher in a new country, and although many of the principles of career development remain the same all over the world, there are a host of unwritten rules

in each country, such as when seeking funding from the Danish Council for Independent Research for the very first time. To this end, we have strengthened the collaboration with SDU's research support RIO and the faculties' research support.

Despite the challenges of hosting in-person events at the DIAS House, our researchers have written a large number of exciting articles, chapters for books, conference contributions etc. So far, we have produced more than 160 publications. DIAS researchers are among the most quoted at SDU, and several of them have received unique awards. It's great to see that our researchers are still motivated and deeply involved in research. Several of them have even contributed within COVID research.

With our new fellows and chairs and a return to the DIAS House in 2021, it's my hope that we can make our research efforts even more interdisciplinary with more joint projects and more co-publications, which is an important goal for DIAS at SDU.

Organization



Portrait of James Rogers,
DIAS Fellow of Political Science:

Unfolding Untold

Military Stories

Through the 20th Century

By Marie Elisabeth Dam.
Originally published
on 11 June 2020

History Hit's Untold History series has DIAS Fellow James Rogers at the helm as it goes through the personal histories of war. Through the weapons and their impact on societies around the world the viewer is provided a lens through which to view the human experience of war.

James Rogers, DIAS Fellow and Assistant Professor at the Center for War Studies at the University of Southern Denmark spends a lot of his time with military drones and modern weapons as the focus of his research. An interest that for the average Joe at first would not align a lot with troubling weapons deployed during the Second World War. But as the series works its way up through the 20th century with selected points of impact, the correlation between the concerns regarding the drones of today and earlier troubling weapons becomes clear.

Unfolding untold history

In the first episode, the viewer meets Joseph Kennedy Jr., the old-

er brother of President John F. Kennedy. Joseph is testing drones during the Second World War. Unfortunately, things do not go according to plan.

"The story of Joe Kennedy Jr is a fascinating one. This was a man who was said to be destined for the White House (instead of his brother). But he died a hero, defending the people of London from the V3 supergun." – James Rogers

The object was to guide the drone towards a secret German V3 site in France, but it explodes before Kennedy Jr. and the co-pilot escape the craft, and as a result both are killed.

Rogers's research focuses on drone warfare, contemporary security policy, and the history of warfare. In Untold History he acts as both producer, writer and actor while he takes the viewers throughout the European continent and 20th century. With that, and his already extensive resume, he can be said to be quite the jack of all trades.

Repercussions of D-day

76 years ago, on June 6, 1944, Operation Overlord began when some 156,000 American, British and

Canadian forces landed on five beaches along a 50-mile stretch of the heavily fortified coast of France's Normandy region.

By late August 1944, all of northern France had been liberated, and by the following spring the Allies had defeated the Germans. The Normandy landings have been called the beginning of the end of war in Europe. The day will forever stand as an impressive masterpiece in the sense of the extensive planning and strategy.

"D-Day was a turning point in the Second World War, one which paved the way for victory. We hear a lot about the victors (and rightly so) yet, there were also a lot of people who were gathered up as Prisoners of War during this period. In the latest episode, we find out what happened to these PoWs when they were sent to prison camps in the UK." – James Roger

The second episode of Untold History follows German and Italian PoWs who were sent to the UK to live out the war. James Rogers visits Camp 83 – Eden Camp in Yorkshire to take a closer look of the story and lives of the prisoners of war.



Portrait of Marco Ragni,
DIAS Fellow of Humanities:

Predicting the Individual Human Reasoner

By Marie Elisabeth Dam.
Originally published on
17 August 2020

DIAS Fellow Marco Ragni has a keen interest in the specifics of how the human mind processes information and how this differs from formal and computational approaches. His goal is to push forward the development of true predictive cognitive models for the individual reasoner using methods from AI and Cognitive Science.

Marco Ragni has always been interested in understanding the human mind and how computational and cognitive systems can model human thinking. He believes

that only models that are capable of predicting an individual human reasoner's inference for given information before the human derives it are true cognitive models.

So far, Marco Ragni has developed several methods for analyzing individual human thinking. Also, he has developed computational models that can assess why some problems are more difficult than others and how to set up benchmark frameworks for true predictive systems. How to build cognitive, computational models that are dealing with the individual will be one of his contributions to the interdisciplinary environment at DIAS.

Marco Ragni trained and has worked both as a computer scientist and psychologist: he has developed computational cognitive models, complexity theories, and he runs online psychological experiments and neuroscientific studies.

His core interest lies in solving the predictive human reasoning task, e.g., is it possible to develop systems that predict about what kind of conclusion someone draws before this happens? Such models can form the next milestone of tutoring systems that can support humans to develop skills and mind-sets to become better thinkers and to increase our understanding of how any computational system works.

"I have always been interested in how the human mind works, and for this you need plenty of methods. Methods from neuroscience, from psychology, from cognitive AI and machine learning. I firmly believe that the human mind is the most complex thing in this world." – Marco Ragni

Interdisciplinary DIAS drew his attention

As a DIAS Fellow at SDU Campus Kolding, Marco Ragni will analyse, via computational thinking, how our society is integrated more in computer science. The question here is, among others, wherein the difference lies between how people think, and how they need to think to deal with computational systems in our society. With this point of departure, Marco Ragni finds it optimal to enter more interdisciplinary collaborations.

Marco Ragni has experienced how scientists tend to stick to their department, focusing with others like them. There is so much to learn from other people and disciplines:

"What I have seen at SDU and DIAS is that people come from very different disciplines and interact to deepen their understanding and to advance science. This has drawn my attention." – Marco Ragni



Portrait of Changzhu Wu,
DIAS Fellow of Physics:

Customizing Enzymes

Amid the Corona Shutdown

By Rikke Ulvedahl Carlsen.
Originally published on
26 May 2020

At the Department of Physics, Chemistry and Pharmacy (FKF) at SDU, DIAS Fellow Changzhu Wu and his team have recently opened a new laboratory. In short, the research conducted at this lab consists of two aspects: immobilizing the enzymes and modifying them.

Enzymes are powerful, biological catalysts which increase the chemical processes in a cell. They are increasingly used commercially, for instance for green productions, in the synthesis of drugs, and even in soap powder. However, they are often unstable under usual industrial conditions, and their natural function cannot meet industrial demands. Therefore, Changzhu's goal as a chemist is to find out how to customize enzymes for specific uses. Not only to make them stronger, but also to perform new tasks that they're originally not capable of:

"The work in my lab is actually simple: I strive to design "clothes" for the enzymes to improve their performance. Some of these clothes are meant to protect the enzymes from harsh industrial conditions (enzyme immobilization), and some are to provide the enzymes with new functions for new jobs (enzyme modification)." – Changzhu Wu

A magic wand

For this purpose, Changzhu and his team not only require biological

tools to produce the enzymes, but also the chemical aids to prove their new ideas. That said, this lab is not just a matter of logistics, but an important requisite for research success:

"Basically, this lab is like a magic wand. With this wand, we enchant the enzymes and make them stronger and better. Afterwards, we need to proof their performance, which requires many instruments that this lab can contain." – Changzhu Wu

Unfortunately, due to the current COVID-19 crisis and subsequent restrictions imposed by the government, the magic has somewhat ceased.

Changzhu Wu and his team have been granted exemption from the restrictions, allowing them to continue their research in enzyme catalysis amid the Corona shutdown – but not without reservation. Even

though the exemption made it possible to open the lab, Changzhu's team has found it necessary to work from home most of the time. This is quite a challenge for a group in this field, as they rely primarily on experimental data.

A change of style

In May 2020, only the team's postdoc was at the lab to continue the core research, while the rest tried to remain as active as possible. Even though these restrictions undoubtedly will have an impact on the research, Changzhu is not worried:

"We are using this special time to complete our research manuscripts and writing, which are tasks that must be completed outside the lab anyway. We are just changing our working style." – Changzhu Wu



DIAS Fellow Dr. Changzhu Wu
(to the left) with his team



By Tine Dolmer.
Originally published on
20 November 2020

Portrait of Joel Cox,
DIAS Fellow of Technical Science:

Finding Ways to Trap Light

on the Nanoscale

As a theoretical physicist, Joel Cox has specialized in the fields of nanophotonics, nonlinear and quantum optics, and condensed matter physics during his research at The Institute of Photonic Sciences (ICFO) in Barcelona, the Max Planck Institute for Quantum Optics in Munich, and now the Centre for Nano Optics at the University of Southern Denmark. Cox is regarded as one of the leading theoretical researchers in the field of nonlinear graphene nano-optics.

Nanophotonics or nano-optics is the study of the behaviour of light on the nanometer scale. As Cox explains it, his research is basically about finding new ways to control light on the nanoscale:

“Light is an electromagnetic wave, and the size of the wave is hundreds of nanometers, which limits how small we can focus it with conventional optics. If we would like to use light in miniaturized devices, say, the way we now use electrons in integrated computer chips, we need to find different ways to manipulate it on much smaller length scales.” – Joel Cox

Using graphene to trap light

Joel Cox’s research focuses on how light interacts with two-dimensional, atomically-thin materials, in particular the new material graphene. Back in 2004

the Russian physicists Andre Geim and Konstantin Novoselov isolated and characterized graphene – an achievement that they received the Nobel Prize in Physics for only six years later.

Graphene is a two-dimensional material consisting of a single layer of carbon atoms arranged in a honeycomb lattice. It is a relatively strong material, and its electrons move in special ways that make it a very good conductor of electricity. Due to its unique electronic properties, and because it is atomically thin, it is also very useful in nanophotonics, where physicists can use special light-matter excitations in graphene called “plasmon polaritons” to trap light and compress it.

A new paradigm for computing?

It’s incredible how fast modern technology has devel-

oped. Just try to recall how your mobile phone looked like 10 years ago. Now, try to imagine what it will look like in 10 years.

Right now, electronic components like those in our mobile phones contain transistors that work with binary 0-1 switches. These switches are being fabricated on sizes of tens of nanometers, so that we can fit millions of them on a single chip, but it is challenging to go any further because they generate enormous heat, and we even might have to worry about quantum mechanical effects. Therefore, scientists are looking for fundamentally new ways to build fast and stable devices that use less energy — photonic devices, that operate with light instead of electricity, might be one solution.

Sapere Aude grant

In November 2020, Joel Cox received the prestigious “Sapere Aude” grant of 6.192,000 DKK from the Independent Research Fund Denmark for his research project “Towards single-photon nonlinear optics in atomically-thin materials”.

“I’m really honoured to have been awarded this prestigious grant—this is a huge boost to my research efforts, and I am looking forward to building a strong research team dedicated to the project I am passionate about.” – Joel Cox

In the new research project Joel Cox will seek to engineer the extreme light confinement associated with two-dimensional polaritons in atomically-thin materials like graphene to actuate nonlinear optical phenomena at ultra-low powers. Nonlinear optical effects are needed to control light with light itself and could allow us to build the photonic analogues of our existing electronic devices. The problem is that light doesn’t easily interact with itself, so nonlinear optical processes are inherently weak and thus inefficient.

The discovery of graphene and other atomically-thin materials might turn out to be a new paradigm for nonlinear optics. As Cox explains it, polaritons, formed when light hybridizes with polarizable excitations in matter, can focus optical fields on the nanoscale to boost light-matter interactions, and this way reduce the light intensity threshold required to trigger nonlinear optical effects.

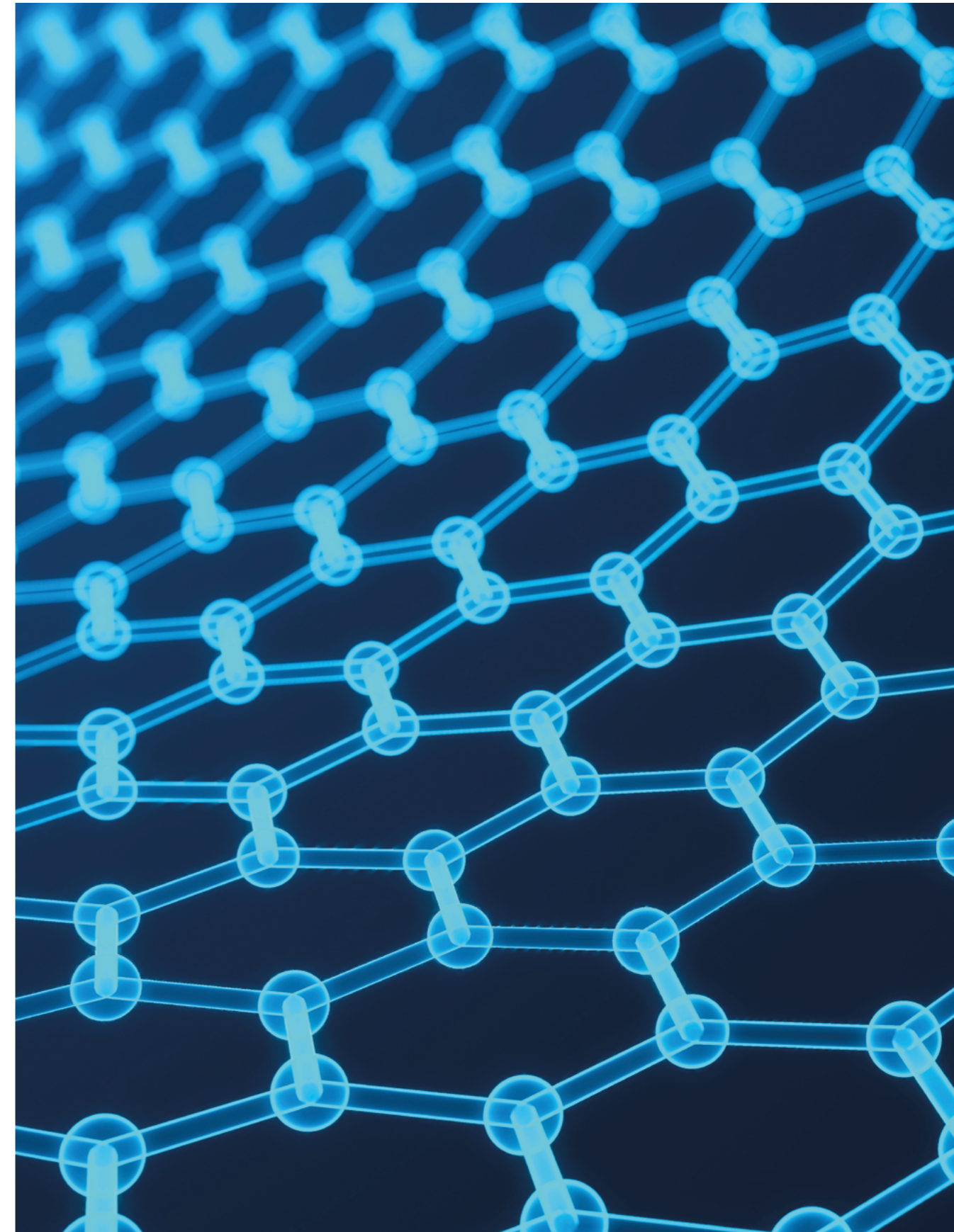
In atomically-thin materials, these polaritons are extremely-confined, so this effect becomes stronger than ever. In other words, if we can use polaritons in atomically-thin materials to compress light so strongly that it starts interacting with itself, we can create a non-linear interaction where light signals control what other light signals do. Then, with “ultrafast” pulses of light that are extremely short in time, we might be able to replace our electronic switches with optical ones, and this way build faster devices that don’t require as much energy.

If the light concentration becomes strong enough, there is a possibility to achieve nonlinear optical interactions with individual photons, the quantum particles of light; this represents the ultimate limit of nonlinear optics, and, besides maximizing the performance of existing classical nonlinear optical technologies, single-photon optical nonlinearity holds tremendous prospects for nanoscience and quantum information technology.

Being a DIAS Fellow

At the Centre for Nano Optics Joel Cox collaborates with DIAS Chair, Professor N. Asger Mortensen and DIAS Chair, Professor Sergey I. Bozhevolnyi. It was Mortensen who initially introduced Cox to the idea of becoming a DIAS Fellow. One of the things that attracted Cox is the emphasis on curiosity-driven research at DIAS.

Cox has now been a DIAS Fellow for two years. As he says, the first year was amazing with inspiring lectures and an international environment with fellows from around the world. To him, it felt very much like an academic start-up. This year we lost some momentum due to the COVID-19 restrictions, but Cox is convinced that DIAS still has a lot of potentials that we haven’t tapped into yet.



Portrait of Angela Y. Chang,
DIAS Fellow of Health Science:

Measuring

the Experienced

Burden of Disease

By Tine Dolmer.
Originally published on
27 November 2020

Since March 2020, Ph.D. Angela Y. Chang has been a DIAS Fellow and Assistant Professor at the Department of Clinical Research at SDU. She is committed to reducing health and wealth inequalities globally through her research and is motivated by the belief that research can provide the inputs needed to inform policies and improve resource allocation, and ultimately, impact population health.

As a researcher within health science, Angela Y. Chang is very interested in how we can measure the experienced burden of disease, not just clinically but also the economic, social and psychological impact, and how the impact might differ depending on the quality of the country's healthcare system.

As Chang explains, the experience of being blind is very different if you live in e.g. Denmark or Zimbabwe, but in health science we consider this the same disease. The clinical severity of being blind

is the same, but you would expect that the experience is very different because we have a great health system in Denmark, while you might not get that much help in Zimbabwe due to a lack of resources.

One of the great things about doing health research in Denmark is that we have very extensive registries. You can use the data to compare multiple impacts of disease across different diseases, like breast cancer and depression. Actually, this is very unique for Denmark; only few countries in the world have registries that make it possible to combine healthcare data with e.g. economic, social, and psychological data.

Supporting policymaking

Angela Y. Chang is truly concerned about real life and how academia should play an actual role in the society. The aim of her research is to help policymakers set the priorities and make good decisions about how to allocate health and welfare resources to different diseases based on evidence on how different population groups are affected by the diseases. Some diseases predominantly affect certain groups of people, so the question is if they should receive more support than they do now.

One of the challenges when working with public health is to avoid making judgements on what is good or bad, e.g. is smoking good or bad? Therefore Chang is always very careful to check if she has any



bias. As she says, the best research question is when you don't know the answer.

The relation between gender equality and health

Another topic that Angela Y. Chang is very interested in is the relation between gender equality and health, if the level of equality in a country has an effect on health or not. As an example, Chang mentions a new study on COVID-19 that shows that countries with a high level of gender equality tend to have more female deaths than countries with a lower level of equality.

Chang has been interested in the relation between gender equality and health for a long while, and by becoming a DIAS Fellow she now has the freedom to explore it further in collaboration with international colleagues.

Life at DIAS

Angela Y. Chang has been a DIAS Fellow since March 2020. By chance a colleague from her PhD programme already knew DIAS Chair Christine Stabell Benn and suggested that Chang applied for a position at DIAS. One of the things about DIAS that attracted Chang is the freedom to do her own research:

"The complete freedom to do whatever you want in terms of research is a luxury to have. Not every academic institution will allow me to do that." – Angela Y. Chang

Chang thinks that DIAS has a unique combination of being a new institution while being supported by chairs with a long and rich background in research. DIAS aims to give researchers the complete freedom to do their research, combined with unconditional support. That is very attractive for Chang as a researcher. Chang is particularly grateful for the support she has received from DIAS Chairs of Health Science, Christine Stabell Benn, Kaare Christensen, and Jim Vaupel.

DIAS Affiliates

Fellows



Pantelis Pipergias Analytis

Fellow of Marketing and Management,
Department of Marketing and Management

About: Ph.D. Pantelis Pipergias Analytis is an Assistant Professor at the Department of Marketing and Management (IMM) at SDU. In his research he develops mathematical and computational models of individual and collective behaviour and uses experiments, big-data and large-scale simulations to assess their descriptive and prescriptive value.



Angela Y. Chang

Fellow of Health Science, Department of Clinical Research

About: Ph.D. Angela Y. Chang is an Assistant Professor at the Department of Clinical Research at SDU. Her research interests lie in the areas of global health, health economics and health metrics. She is committed to reducing health and wealth inequalities globally through her work and is motivated by the belief that research can provide the inputs needed to inform policies and improve resource allocation, and ultimately, impact population health.



Francesco Cinnirella

External Fellow (Italy), Department
of Economics, Bergamo, Italy

About: Ph.D. Francesco Cinnirella is Associate Professor of Economics at the University of Bergamo. His research focuses on the determinants of long-run growth and comparative development. In particular complex interactions between fertility and education, the political-economic determinants of the accumulation of human capital, and the determinants of technological innovation.



Joel Cox

Fellow of Technical Science,
SDU NanoOptics at The Mads Clausen Institute

About: Ph.D. Joel Cox is an Assistant Professor at SDU NanoOptics at the Mads Clausen Institute at SDU. His research expertise falls within the categories of nanophotonics, nonlinear and quantum optics, and condensed matter physics, and he is one of the leading theoretical researchers in the field of nonlinear graphene nano-optics.

DIAS Affiliates Fellows



Benjamin Jäger

Fellow of Mathematics and Computer Science,
Department of Mathematics and Computer Science

About: Ph.D. Benjamin Jäger is an Assistant Professor at the Department of Mathematics and Computer Science (IMADA) and Centre for Cosmology and Particle Physics Phenomenology (CP³-Origins) at SDU. His research interests include lattice gauge theories, high performance computing, hadron structure and form factors, anomalous magnetic moment ($g - 2$), symmetries at finite temperature as well as sign-problem and Complex Langevin simulations.



Carolin Löscher

Fellow of Geobiology, Department of Biology

About: Ph.D. Carolin Löscher is an Associate Professor at Nordcee at SDU. She currently studies the response of the marine microbes to climate change and climate extremes. She is particularly interested in microbes involved in major biogeochemical cycles (carbon and nitrogen), their response to changes in the ocean's pH and oxygen status.



Keith Andrew Meyers

Fellow of Economics, Department of
Business and Economics

About: Ph.D. Keith Andrew Meyers is an Assistant Professor at Macroeconomics, International Economics and Economic History group in the Department of Business and Economics at SDU. His dissertation studies the economic consequences of atmospheric nuclear testing conducted in the Nevada desert during the 1950s. His current research interests include environmental economics, health economics, and economic history.



Jesper Bonnet Møller

Fellow of Health, Department of Cancer
and Inflammation Research

About: Ph.D. Jesper Bonnet Møller is an Assistant Professor at IMM at the Department of Cancer and Inflammation Research at SDU. He was a Post-doc at the Department of Cardiovascular and Renal Research at the same place until 2015. From here his career took him to Jill Roberts Institute for Research in Inflammatory Bowel Disease at Department of Microbiology and Immunology at Weill Cornell Medicine at Cornell University, New York.



DIAS Affiliates Fellows



Kedar Nath Natarajan

Fellow of Biochemistry and Molecular Biology,
Department of Biochemistry and Molecular Biology

About: Ph. D. Kedar Nath Natarajan is an Assistant Professor at Department of Biochemistry and Molecular Biology at SDU. Kedar Natarajan's research aims to understand how a single fertilized cell divides, scales and generates the incredible complexity of 37 trillion cells in varied tissues and organs within the human body. Specifically, he and his group investigate the fundamental process of the cell cycle during embryonic development at single-cell resolution using state-of-art imaging and next-generation sequencing technologies.



Aglae Pizzone

Fellow of Humanities, Department of History

About: Ph.D. Aglae is an Assistant Professor at the Department of History at SDU. Aglae Pizzone is a byzantinist with a training in classics. In her research she focuses on cultural history and history of the ideas. She has worked on conceptualizations of fiction and imagination from Graeco-Roman to Medieval times as well as on the history of emotions in Byzantium.



Rosa M. Rodriguez Porto

Fellow Humanities, Department of History

About: Ph.D. Rosa María Rodríguez Porto is an Assistant Professor at the Department of History at SDU. Rosa María Rodríguez Porto is an art historian by training, has extensively worked on medieval book illumination, on medieval Iberian courtly culture and on the Classical tradition in the Middle Ages. She is currently working on the Late Medieval Iberian historiographical production.



Marco Ragni

Fellow of Humanities, Department of
Design and Communication

About: Ph.D. Marco Ragni is an Assistant Professor at the Department of Design and Communication at SDU. He is a trained mathematician with two Ph.D.'s, one in Computer Science (2008) and one in Cognitive Science (2013) from the University of Freiburg. He has a keen interest in the specifics of how the human mind process information and how this differs from formal and computational approaches.



James Rogers

Fellow of Political Science,
Department of Political Science

About: Ph.D. James Rogers is Assistant Professor at the Department of Political Science at SDU and Associate Fellow within The London School of Economics and Political Science's foreign policy think tank (LSE IDEAS). His research focuses on drone warfare, contemporary security policy, and the history of warfare.

DIAS Affiliates Fellows



Maria Timofeeva

Fellow of Health Science, Department of Public Health

About: Dr. Maria Timofeeva is an Assistant Professor at the Unit of Epidemiology, Biostatistics and Biodemography at the Department of Public Health at SDU. Her work aims to use twin design to study how environmental exposures and genetics influence intermediate molecular phenotype and how it affects risk of complex disease such as cancer. Her research interest is on cancer epidemiology with a specific focus on genetic and molecular epidemiology of cancer and a complex interplay between genetic and environmental causes of disease.



Changzhu Wu

Fellow of Physics, Chemistry and Pharmacy,
Department of Physics, Chemistry and Pharmacy

About: Dr. Changzhu Wu is an Assistant Professor at the Department of Physics, Chemistry and Pharmacy (FKF) at SDU. Changzhu is focusing his research on NanoBiocatalysis, where he uses cutting-edge nanomaterials to improve the performance of enzymes/whole cells, in particular for synthesis in organic solvents.



Bryan Yazell

Fellow of Humanities, Department for the Study of Culture

About: Ph.D. Bryan Yazell is an assistant professor at the Department for the Study of Culture at SDU. His research has appeared in, among other sources, Configurations, Modern Fiction Studies, The Journal of Transnational American Studies, Studies in the Fantastic, and James Joyce Quarterly. His research investigates how literature reflects or intervenes in public debates regarding matters of social welfare in general and migrant groups in particular.



Gufei Zhang

Fellow of Technical Science,
The Mads Clausen Institute

About: Ph.D. Gufei Zhang is an Assistant Professor at the NanoSYD Center at the Mads Clausen Institute at SDU. His research interests lie in quantum transport, electron-correlated states, nanoscience and nano-technology, and material science.



Press Release:

Sten Rynning appointed to agenda-setting network

By Marlene Jørgensen

It is issues about European defence and security that the network is debating and looking for solutions to – a network of which SDU Professor Sten Rynning has just joined.

Professor and Dean of Research Sten Rynning has joined an exclusive group of leading experts addressing security and defence issues across Europe.

The network is called The Alphen Group and counts 16 members, all of whom are concerned about the future of the transatlantic relationship and European security.

Sten Rynning has been researching international politics for 24 years, and he has mainly worked on NATO and the war in Afghanistan. He is also an active debater and has helped to put SDU's Center for War Studies on the world map – a centre he established himself back in 2011.

Solutions for the Future of Security Policy

The motivation behind The Alphen Group is a common concern about developments in European security and defence policy against growing divisions across the Atlantic and within Europe. That is why the experts have set out to seek solutions for a safer Europe.

In short, the ambition is to move beyond the culture of discussion in Europe, which rarely reaches from words to actual action, by offering decision-makers a basic vision for the security and defence of the future.

“It is incredibly exciting to be part of an expert environment where we focus on formulating thoughts and ideas adapted to political problems in an attempt to create positive change”, says Sten Rynning, adding, “The network is geared to seek dialogue with the political environment. We need to be not just creative, but creative and relevant.”

Meet the researcher

Sten Rynning is professor of international politics at the Center for War Studies and dean of research at the Faculty of Social Sciences. In addition, he is a senior fellow at SDU's interdisciplinary research centre, The Danish Institute for Advanced Study. Most recently, he has now joined the network The Alphen Group.

Contact:

<https://portal.findresearcher.sdu.dk/da/persons/sry>

Read about The Alphen Group:

<https://thealphengroup.home.blog/our-purpose/>

...and follow the group's blog posts:

<https://thealphengroup.home.blog/>



Nicolai Foss

has recently been appointed

Adjunct Professor

in Strategic

Organization Design at the Department of Marketing & Management under the Faculty of Business and Social Science at SDU. Now, he also joins DIAS as external Chair of Marketing and Management.

Since he received his PhD degree from Copenhagen Business School in 1993, Nicolai Foss has established himself as one of the most prominent researchers in the fields of strategy, organization and entrepreneurship.

“It is incredibly exciting to have a capacity like Nicolai Foss affiliated to DIAS and I hope that he can contribute to the interdisciplinary research environment, not least based on his research within organizations, entrepreneurship and innovation.”

- DIAS Director Marianne Holmer

In addition to his scholarly pursuits, Foss served for almost a decade as Department Head at the Copenhagen Business School before he left for four years as Rodolfo Debenedetti Chair of Entrepreneurship

at the Bocconi University in Milan. He returned to Denmark at the end of 2019. Foss is a Fellow of the Strategic Management Society, a member of Academia Europaea and was named “Highly Cited Researcher” in Clarivate Analytics in both 2018 and 2019.

About his new appointment, Foss states:

“I am pleased and honored to be appointed as Chair of DIAS. Although I am Chair “part-time”, I look forward to participating in the important work done by the extremely strong researchers in DIAS. DIAS is a unique marker in Danish research that one can only hope will be imitated elsewhere, so I also look forward to the period as DIAS Chair for research policy reasons.”

Jens Ringsmose, dean at The Faculty of Business and Social Sciences, is just as excited about Foss’ association with DIAS:

“At the Faculty of Business and Social Sciences, we are delighted to have Nicolai Foss with us as an adjunct professor in Strategic Organization Design. Foss has established himself as a leading scholar within his field,

and I have no doubt that he will contribute in important ways to the work done here at the BSS. Also, I feel absolutely confident that Nicolai Foss’ affiliation to DIAS will benefit the work of the unique interdisciplinary research environment established here at SDU with the creation of DIAS.”

Nicolai Foss’ bibliography includes 215 journal articles, 102 book chapters, and 26 books and his work has been published in several leading journals such as *Academy of Management Review*, *Academy of Management Journal*, *Organization Science*, *Strategic Management Journal* and many others. His books have been published by leading publishers like Cambridge University Press and Oxford University Press and many of them have, along with several of his articles, been translated into Chinese, Russian and Spanish.

Now we are happy to announce, that the next page in Foss’ impressive academic career will be turned here at DIAS.

Welcome aboard, Nicolai!



For more information about Nicolai Foss, please refer to

<https://portal.findresearcher.sdu.dk/da/persons/nicolaijfo>

DIAS in Guinea-Bissau, West Africa

The management of DIAS and SDU is currently in West Africa. The purpose is to visit the Bandim Health Project on location and to inspect the multidisciplinary research station organized by University of Southern Denmark, SDU.

By Susanne Siig Petersen

GUINEA-BISSAU: A Danish delegation of Vice-Chancellor Henrik Dam, Pro-Vice-Chancellor Bjarne Graabech Sørensen, Chair in DIAS Christine Stabell Benn and Director of DIAS, Marianne Holmer are currently in Guinea-Bissau in West Africa to see the work of the Bandim Health Project and the research facilities.

During the trip they paid a visit to the National Hospital Simão Mendes to see the randomized studies and data-collection

Director Marianne Holmer tells enthusiastic about their experiences:

“An exciting day when we first visited the hospital in Bissau to see the vaccination program, which is being led by the Bandim Health Project. Next, we visited UNICEF to hear how they work with the water resources in the country and in the afternoon, we visited the Bandim project.”

“It was super interesting to hear about the many different projects that have been running for over 40 years on site and which are stored in folders all over the station.”

“It was even more exciting to be in the field, where we each joined families to get the status of the children listed in the vaccination program.”



Kannan Govindan awarded Distinguished Professor in Supply Chain Management

At the 5th North American Industrial Engineering and Operations Management conference, August 10-14, 2020, Professor and Head of Centre with Department of Technology and Innovation, SDU, and at Centre for Sustainable Supply Chain Engineering, SDU, Kannan Govindan was awarded “Distinguished Professor in Supply Chain Management”.

IEOM Society’s core purpose is to globally foster critical thinking and its effective utilization in the field of Industrial Engineering (IE) and Operations Management (OM) by providing means to communicate and network among diversified people.

The organisation recognizes educators, researchers, and professionals for the significant contribution through teaching, research and publication, service, innovation, or leadership in the field of industrial engineering and operations management.

We are happy to have a Chair at DIAS awarded and recognised for his excellence. Congratulations Professor Kannan Govindan!

DIAS Affiliates

Chairs



Jørgen Ellegaard Andersen

Chair of Quantum Mathematics,
Center for Quantum Mathematics

About: Ph.D. Jørgen Ellegaard Andersen is the founder and Head of the Center for Quantum Mathematics at SDU. In 2019 he was appointed Professor at the Mads Clausen Institute at the Faculty of Engineering at SDU. His research spans a wide range of topics within pure mathematics – in particular within the branch geometry and topology, where he focuses on the parts which have close ties to Quantum Theory. These are: Quantum topology, geometry, topology and quantization of moduli spaces, which particularly involves quantization of curved phase spaces.



Søren Askegaard

Chair of Social Science,
Department of Marketing & Management

About: Ph.D. Søren Askegaard is the founder of the research unit Consumption, Culture and Commerce the Department of Marketing & Management at SDU and the incoming president of the international Consumer Culture Theory Consortium. His research centers around the cultural logics of contemporary consumer culture. He has done research in various topics within this domain, including globalization processes, food and health in consumption, branding and commercial imagery and desire as a consumer cultural logic.



DIAS Affiliates Chairs



Christine Stabell Benn

Chair of Health Science, Faculty of Health Sciences

About: Dr. Christine Stabell Benn is Professor at Odense Patient data Explorative Network (OPEN) at the Faculty of Health Sciences at SDU and Professor in Global Health since 2013. She is also Professor and Head of the Bandim Health Project at Statens Serums Institut (SSI). Her research aims to document that vaccines and vitamins affect the immune system in a much more general way than previously thought.



Sergey I. Bozhevolnyi

Chair of Technical Science, The Mads Clausen Institute

About: Dr. Scient. Sergey I. Bozhevolnyi is the founder and current Head of Centre for Nano Optics at SDU (SDU NanoOptics). His research spans over a wide range of topics of nanoscience and nanotechnology, including linear and nonlinear nano-optics, plasmon-based nanophotonics, integrated and fiber optics, linear and nonlinear surface-enhanced spectroscopy and imaging, quantum plasmonics.



Donald E. Canfield

Chair of Biology, Department of Biology

About: Ph.D. Donald E. Canfield is Professor of Ecology at the Department of Biology and Head of Research Unit at Nordic Center for Earth Evolution (NordCEE) at SDU. Furthermore, he is former director of NordCEE, a center funded for 10 years by the Danish National Research Foundation. Broadly speaking, Donald E. Canfield uses the study of modern microbes and microbial ecosystems to understand the evolution of Earth's surface chemistry and biology through time.



Kaare Christensen

Chair of Health Science,
Department of Public Health

About: Dr. Med. Kaare Christensen is the Head of Research at the unit of Epidemiology, Biostatistics and Biodemography (EBB) at the Department of Public Health at SDU. He has a longstanding interest in sex differences in health and survival as well as in the relation between early life events and later life health outcomes.



Nicolai J. Foss

External Chair of Marketing and Management,
Department of Marketing & Management

About: Ph.D. Nicolai J. Foss is Adjunct Professor in Strategic Organization Design at the Department of Marketing & Management (IMM) under the Faculty of Business and Social Science at SDU. His research interests include strategy, organization and entrepreneurship, where he has established himself as one of the most prominent researchers in the field.

DIAS Affiliates Chairs



Ronnie N. Glud

Chair of Biology, Department of Biology

About: Dr. Scient. Ronnie N. Glud is Professor at the Department of Biology and Nordic Center for Earth Evolution (Nordcee) at SDU. He is a biogeochemist with strong interests in microbiology. He has a particular interest in ecosystem responses towards environmental and climatic changes. He has developed and applied novel sensor approaches and in situ technologies for studying benthic carbon and nutrient turn-over in many challenging environments, with a focus that spans from microscale interactions to global element cycling.



Kannan Govindan

Chair of Technical Sciences,
Department of Technology and Innovation

About: Ph.D. Kannan Govindan is a founder and current Head of the Center for Sustainable Supply Chain Engineering at SDU. His research interests include digital supply chain, industry 4.0 on supply chain, sustainable development goals, reverse logistics, closed loop supply chain, digitalized sustainable circular economy, green supply chain management, and sustainable supply chain management.



Thorbjørn Knudsen

Chair of Social Science, Strategic Organization Design

About: Ph.D. Thorbjørn Knudsen is Director of the research unit for Strategic Organization Design (SOD) at SDU. He is also one of the Founders of DIAS. Research centers around evolutionary and adaptive processes in organizations and the way organization design can shape these processes. He is widely recognized for advancing theory on organizational design and adaptive processes through formal modeling and experimental methods.



Anne-Marie Mai

Chair of Humanities,
Department for the Study of Culture

About: Ph.D. Anne-Marie Mai is Professor at the Department for the Study of Culture at SDU. In her research, she has especially focused on history of Danish Literature, contemporary Nordic literature, history of Nordic Women's literature and history of Scandinavian Enlightenment, literary historiography, narrative medicine and human health.



Susanne Mandrup

Chair of Biochemistry and Molecular Biology,
Department of Biochemistry and Molecular Biology

About: Ph.D. Susanne Mandrup is Professor at Department of Biochemistry and Molecular Biology at SDU where she serves as Director of the Center of Excellence in Functional Genomics and Tissue Plasticity (ATLAS) and the newly established Center for Adipocyte Signaling (ADIPOSIGN), as well as Head of the Functional Genomics & Metabolism Research Unit.

DIAS Affiliates Chairs



Søren Kragh Moestrup

External Chair of Health Science,
Department of Molecular Medicine

About: M.D. Søren Kragh Moestrup is Professor at the Department of Bio-medicine at Aarhus University. His major research field is the studying of cellular receptors for endocytosis. His lab has over the years discovered several new receptors which have been characterized in terms of structure, function and role in disease. For instance, the receptors for uptake of hemoglobin and vitamin B12 were discovered here.



N. Asger Mortensen

Chair of Technical Science,
Department of Technical Science

About: Dr. Techn. N. Asger Mortensen is a VILLUM Investigator in the Centre for Nano Optics at SDU, being the PI of a major research program in quantum plasmonics with support from VILLUM FONDEN. He has a background in theoretical and condensed-matter physics, while his research experience spans a much wider range of topics in physics and nanotechnology, bridging the often-postulated gap between fundamental and applied research.



Lars Boje Mortensen

Chair of Humanities, Department of History

About: Ph.D. Lars Boje Mortensen is a Professor of Ancient and Medieval Cultural History at the department of History at SDU. His main interests are Latin literature from Antiquity to the Renaissance, Medieval studies between history and literature, the interface between Latin and vernacular, the history of historiography and the theory and practice of literary history.



Klaus Petersen

Chair of Humanities,
Department of History and
Department of Political Science

About: Ph.D. Klaus Petersen is professor of welfare history at the Department of History and Department of Political Science at SDU. Since 2008, he has been the director of the cross-disciplinary Danish Centre for Welfare Studies (DaWS). He also is docent in political history at Helsinki University and part-time professor (2018-2020) at University of Oslo. His main research interest is the development of the welfare state.



Carsten Rahbek

External Chair of Biology, Faculty of Science

About: Ph.D. Carsten Rahbek is Adjunct Professor at the Department of Biology at SDU and holds a Full Professor Chair in Macroecology at the GLOBE Institute at University of Copenhagen. In his biodiversity research he merges macroecological distribution data on thousands of species (millions of records) with evolutionary information derived from phylogenetic trees.

DIAS Affiliates Chairs



Minik Rosing

External Chair of Geology,
Department of Biology

About: Ph.D. Minik Rosing is Adjunct Professor at the Department of Biology at SDU and Professor at Geological Museum and Natural History Museum at University of Copenhagen. He was one of the leaders of the Galathea 3 Expedition and is the man behind the analysis of Isua sediment, pointing out that photosynthesis already took place 3.7 billion years ago.



Francesco Sannino

Chair of Physics, CP³-Origins

About: Ph.D. Francesco Sannino is the Founder and Director of the Centre for Cosmology and Particle Physics Phenomenology (CP³-Origins) at SDU. He is also one of the Founders of DIAS. His work crosses several realms of particle physics and cosmology from bright and dark extensions of the standard model and inflationary cosmology to the mathematical underpinning of theories of fundamental interactions.



James W. Vaupel

Chair of Health Science, Department of Public Health

About: Ph.D. James W. Vaupel is Professor and Founding Director of Max Planck Institute for Demographic Research (MPIDR). Since 1991 he has been Professor of Demography and Epidemiology at SDU. His research has helped to expand the field of demography by taking a multidisciplinary approach that incorporates both human and nonhuman biology, epidemiology, mathematics, economics, genetics, and public policy.



Eske Willerslev

External Chair of Geogenetics,
Department of Biochemistry and
Molecular Biology

About: Dr. Scient. Eske Willerslev at Center for Geogenetics under the National Museum of Natural History, Prince Philip Professor at University of Cambridge and Adjunct Professor at Department of Biochemistry and Molecular Biology (BMB) at SDU. He is a well-known Danish DNA researcher and evolutionary geneticist notable for his pioneering work in molecular anthropology, paleontology and ecology.



DIAS Affiliates

Senior Fellows



Nina Bonderup Dohn

Senior Fellow of Humanities,
Department of Design and Communication

About: Ph.D. Nina Bonderup Dohn is Professor in Humanistic Information Science at the Department of Design and Communication at SDU. Her research field bridges between epistemology, learning theory, and cognitive theory, and does so both philosophically and in terms of the development and testing of concrete designs for learning in practice, with a special focus on the role of ICT.



Trine Flockhart

Senior Fellow of Social Science,
Department of Political Science and Public Management

About: Ph.D. Trine Flockhart is Professor of International Relations in the Department of Political Science at SDU. Her research focuses on international order, NATO, European Security, the liberal international order (and its crisis), transatlantic relations, and major processes of change and transformation.



Kathrin Maurer

Senior Fellow of Humanities,
Department for the Study of Culture

About: Ph.D. Kathrin Maurer is Professor (mso) for Humanities and Technologies and the official leader of the Center for Humanities and Technologies at SDU. Her research interest lies especially in the relationship between technology and humanities. From a profile in German Literature, her interest has brought her closer to technologies, art, and media.



Jeppe Nevers

Senior fellow of History, Department of History

About: Ph.D. Jeppe Nevers is Professor of Modern History and Director of the Center for Maritime and Business History at SDU. Jeppe Nevers has written on a wide range of topics in modern Danish and European history, with an emphasis on the history of democracy, business history, and conceptual history. He is currently working on the history of capitalism, with a focus on the Danish experience.

DIAS Affiliates Senior Fellows



Sten Rynning

Senior Fellow of Social Science,
Department of Political Science and Public Management

About: Ph.D. Sten Rynning is Professor and Vice Dean for Research at the Faculty of Business and Social Sciences at SDU. He founded the Center for War Studies at SDU in 2011 and headed it until 2019. He has advised the commission of inquiry into the Danish decisions to enter the wars in Kosovo, Afghanistan, and Iraq (2017-2019) and ambassador Peter Taksøe-Jensen's official review of Danish Foreign Policy (2015-2016). His research focuses on NATO and modern war.



Paul Richard Sharp

Senior Fellow of Business and Economics,
Department of Business and Economics

About: Ph.D. Paul Richard Sharp is Professor at the Department of Business and Economics, at Econometrics and Economic History, at HEWI, at HEDG and at the Interdisciplinary Centre on Population Dynamics at SDU. His research areas include economic history, globalization in the 19th century, pre-industrial economic growth and the development of the Danish dairy industry.



Sune Vork Steffensen

Senior Fellow of Humanities,
Department of Language and Communication

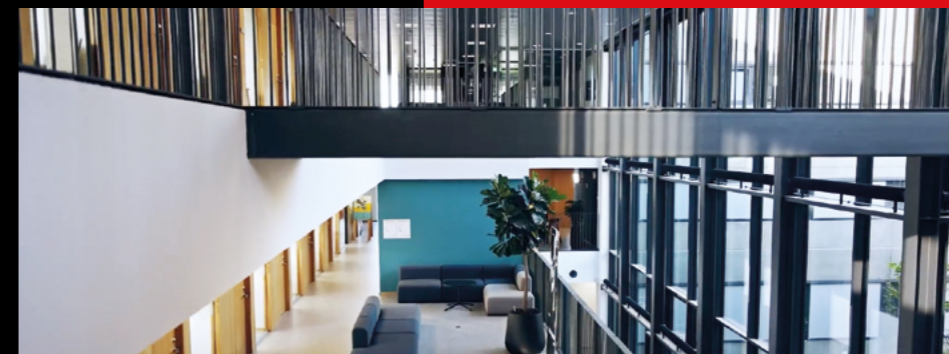
About: Ph.D. Sune Vork Steffensen is Professor in Language, Interaction, and Cognition at SDU. He is also the Director of the university's Centre for Human Interactivity. Focusing on how language and cognition intersect in complex social and dialogical systems, in ways that transform the human ecology, his research draws on ecological, dialogical and distributed approaches to language, interaction and cognition.



Pieter Vanhuyse

Senior Fellow of Social Sciences,
Department of Political Science and
Public Management

About: Ph.D. Pieter Vanhuyse is a Full Professor at the Department of Political Science and Public Management and the Danish Centre for Welfare Studies (DaWS) at SDU. Pieter Vanhuyse has published widely in political sociology, political demography and political economy, focusing on welfare states, public policies, demographic change, sustainability and intergenerational relations and justice, and quality education and human capital.





Top-10 Publications

By Social Media Mentions

The following three top-10s are based on social media mentions drawn from SDU Analytics from January 2020 up to and including December 2020.

DIAS Fellows:

1. Single-cell RNA-sequencing of differentiating iPSCs reveals dynamic genetic effects on gene expression by **Kedar Nath Natarajan** published in *Nature Communications* on 10 February. **SoMe Mentions: 216.**
2. Glycosylation of immunoglobulin G is regulated by a large network of genes pleiotropic with inflammatory diseases by **Maria Timofeeva** published in *Science Advances* on 19 February. **SoMe Mentions: 123.**

3. Dendritic cell-derived hepcidin sequesters iron from the microbiota to promote mucosal healing by **Jesper B. Moeller** published in *Science* on 10 April 2019. **SoMe Mentions: 117.**
4. Interleukin-33 Induces the Enzyme Tryptophan Hydroxylase 1 to Promote Inflammatory Group 2 Innate Lymphoid Cell-Mediated Immunity by **Jesper Bonnet Møller** published in *Immunity* on 1 April 2020-04-01. **SoMe Mentions: 68.**
5. Single-cell transcriptomics identifies CD44 as a marker and regulator of endothelial to haematopoietic transition by **Kedar Nath Natarajan** published in *Nature Communications* on 29 January 2020. **SoMe Mentions: 60.**
6. TENET: gene network reconstruction using transfer entropy reveals key regulatory factors from single cell transcriptomic data by **Kedar Nath Natarajan** in cooperation with **Simon T. Jakobsen** published in *Nucleic Acids Research* on 10 November 2020. **SoMe Mentions: 51.**
7. Drone Warfare: Distant Targets and Remote Killings by **James Rogers** on 13 March 2020. **SoMe Mentions: 45.**
8. Can pandemics affect educational attainment? Evidence from the polio epidemic of 1916 by **Keith Andrew Meyers** published in *Cliometrica* on 27 July 2020. **SoMe Mentions: 31.**
9. Factors controlling plankton community production, export flux, and particulate matter stoichiometry in the coastal upwelling system off Peru by **Carolin Löscher** published in *Biogeosciences* on 12 October. **SoMe Mentions: 29.**
10. Transcriptional Dynamics of Hepatic Sinusoid-Associated Cells After Liver Injury by **Kedar Nath Natarajan** in cooperation with Mike K. Terkelsen, Sönke Detlefsen et.al. published in *Hepatology* on 20 October 2020. **SoMe Mentions: 22.**

DIAS Chairs and Senior Fellows:

1. Can existing live vaccines prevent COVID-19? by **Christine Stabell Benn** in cooperation with Peter Aaby published in *Science* on 11 June 2020. **SoMe Mentions: 1866.**
2. Vaccinology: time to change the paradigm? by **Christine Stabell Benn** in cooperation with Andreas Rieckmann; Signe Sorup; Peter Aaby and Ane Fisker published in *Lancet Infectious Diseases* on 1 October 2020. **SoMe Mentions: 598**
3. Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population-based studies with 65 million participants by **Kaare Christensen** in cooperation with Morten Sodemann, Peter Lund Kristensen, Merete Osler et.al. published in *The Lancet* on 1 November 2020. **SoMe Mentions: 513.**
4. Defining trained immunity and its role in health and disease by **Christine Stabell Benn** published in *Nature Reviews Immunology* on 3 April 2020. **SoMe Mentions: 420.**

5. Safety and COVID-19 Symptoms in Individuals Recently Vaccinated with BCG: a Retrospective Cohort Study by **Christine Stabell Benn** in cooperation with L. Charlotte J de Bree and Peter Aaby published in *Cell Reports Medicine* on 1 August 2020. **SoMe Mentions: 412.**
6. WHO's rollout of malaria vaccine in Africa: can safety questions be answered after only 24 months? by **Christine Stabell Benn** in cooperation with Peter Aaby and Ane Fisker published in *British Medical Journal* on 24 January 2020. **SoMe Mentions: 286.**
7. Second wave COVID-19 pandemics in Europe: a temporal playbook by **Francesco Sannino** published in *Scientific Reports* on 23 September 2020. **SoMe Mentions: 277.**
8. BCG Vaccination in Humans Elicits Trained Immunity via the Hematopoietic Progenitor Compartment by **Christine Stabell Benn** in cooperation with L. Charlotte J de Bree and Bas A. Blok published in *Cell Host & Microbe (Science Direct)* on 12 August 2020. **SoMe Mentions: 223.**
9. The non-specific and sex-differential effects of vaccines by **Christine Stabell Benn** in Cooperation with Peter Aaby in *Nature Reviews Immunology* on 27 May 2020. **SoMe Mentions: 214.**
10. Highly interconnected enhancer communities control lineage-determining genes in human mesenchymal stem cells by **Susanne Mandrup** in Cooperation with Elvira Laila van Hauwaert, Mette Larsen et.al. in *Nature Genetics* on 5 October 2020. **SoMe Mentions: 150.**
3. Population genomics of the Viking world by **Eske Willerslev** in cooperation with Anne Pedersen and Rasmus Nielsen in *Nature* on 16 September 2020. **SoMe Mentions: 851.**
4. Arctic-adapted dogs emerged at the Pleistocene–Holocene transition by **Eske Willerslev** in co-operation with Anders J. Hansen; Morten Meldgaard and Bent Petersen published in *Science* on 25 June 2020. **SoMe Mentions: 628.**
5. The dental proteome of Homo antecessor by **Eske Willerslev** published in *Nature* on 1 April 2020. **SoMe Mentions: 618.**
6. Diverse variola virus (smallpox) strains were widespread in northern Europe in the Viking Age by **Eske Willerslev** in cooperation with Anders Hansen published in *Science* on 24 July 2020. **SoMe Mentions: 495.**
7. Using paleo-archives to safeguard biodiversity under climate change by **Carsten Rahbek** published in *Science* on 27 August 2020. **SoMe Mentions: 488.**
8. Influence of past climate change on phylogeography and demographic history of narwhals, *Monodon monoceros* by **Eske Willerslev** published in *Proceedings of the Royal Society B: Biological Sciences* on 22 April 2020. **SoMe Mentions: 132.**
9. Tissue-resident macrophages in omentum promote metastatic spread of ovarian cancer by **Søren K. Moestrup** in co-operation with Thomas K. Doktor published in *The Journal of Experimental Medicine* on 17 January 2020. **SoMe Mentions: 114.**

DIAS External Chairs:

1. Evidence of human occupation in Mexico around the Last Glacial Maximum by **Eske Willerslev** in *Nature* on 22 July 2020. **SoMe Mentions: 1011.**
2. Dense sampling of bird diversity increases power of comparative genomics by **Carsten Rahbek** in *Nature* on 11 November 2020. **SoMe Mentions: 955.**
10. Dispersion fields reveal the compositional structure of South American vertebrate assemblages by **Carsten Rahbek** published in *Nature Communications* on 24 January 2020. **SoMe Mentions: 56.**



External Funding

of Research Projects

2020

The following list consists of external funding received by DIAS Fellows between 1 January 2019 and December 2020.

Kedar Nath Natarajan:		
<i>Cracking the cell cycle code: The journey from a single-cell to an organism</i>	Villum Foundation	9.926,800 DKK
<i>Multiscale approach to engineer 3D bio-printed physiological human skin for use in basic and applied research</i>	Novo Nordisk Foundation	2.404,050 DKK
Carolin Löscher:		
<i>Marine geoengineering- A tool to mitigate climate change?</i>	Villum Foundation	9.921,695 DKK
<i>DEveloping geoengineering tools to Systematically Increase ocean Resilience to climate change</i>	Independent Research Fund Denmark	756,000 DKK
<i>Future stimulated nitrogen fixation: threatening the health of coastal ecosystems?</i>	Independent Research Fund Denmark	6.187,496 DKK

Changzhu Wu:		
<i>Tailoring protein-polymer conjugates for semisynthetic enzymes</i>	Independent Research Fund Denmark	6.190,978 DKK
<i>Fast protein liquid chromatography for protein purification</i>	Carlsberg Foundation	427,113 DKK
Aglae Pizzone:		
<i>Before copyright: pre-modern practices of intellectual property protection</i>	Nordic Council of Ministers	285,335 DKK
<i>Being 'Mad' in Byzantium. Toward a History of Mental Disorders in Early and Middle Greek Middle Ages (MadByz)</i>	The EU Framework Programme for Research and Innovation - Horizon 2020	2.450,812 DKK
Keith Andrew Meyers:		
<i>Evaluating the Long-Run Socioeconomic Effects of Childhood Vaccination (Valvax)</i>	Marie Curie Individual Fellowship, EU	1.500,000DKK
James Rogers:		
<i>The Vulnerabilities of the Drone Age: Strategic Foresight Planning out to 2035</i>	NATO	375,000 DKK
Joel Cox:		
<i>Towards single-photon nonlinear optics in atomically-thin materials</i>	Independent Research Fund Denmark	6.192,000 DKK
Gufei Zhang:		
<i>Novel Transistors for Extremely Low-Consumption Operation</i>	Fabrikant Mads Clausens Fond	99.458 DKK
Jesper Bonnet Møller		
<i>FIBCD1-mediated regulation of intestinal fungi in inflammatory bowel disease</i>	Novo Nordisk Fonden	1.400.000 DKK



DIAS

Research Support

SDU's Research & Innovation Organisation supports researchers for project development and fundraising. The faculties offer research counselling as well through the faculty research support teams. The counselling varies in opportunities and content between the units.

New DIAS Fellows are offered start-up meetings with the research support units at the faculties.

The new DIAS Fellows are encouraged to attend the grant writing courses that are offered by SDU, and the local research support units make sure to be in close contact with new fellows.

The responsible DIAS mentor and the research support units will cooperate in supporting the fellows in making a funding plan to support the establishment of their research topic/group at SDU.

DIAS Fellows Hiring Plan

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Faculty of Science									
Mathematics and Computer Science (Benjamin Jäger)	Oct								
Biology (Carolin Löscher)		Jan							
Physics, Chemistry and Pharmacy (Changzhu Wu)		Feb							
Biochemistry and Molecular Biology (Kedar Nath Natarajan)		Mar							
Biology (in process)					Jan				
Faculty of Business and Social Sciences									
Business and Economics (Francesco Cinnirella)	Oct		20%						
Political Science and Public Management (James Rogers)		May							
Strategic Organization Design (Pantelis Analytis)		July							
Business and Economics (Keith Meyers)		Sep							
Danish Centre for Welfare Studies (in process)					Jan				
Faculty of Engineering									
Nano Science (Gufei Zhang)		Nov							
Theoretical Nano Plasmonics (Joel Cox)			Feb						
1 new position - (not yet advertised)									
Sustainable Supply Chain Engineering (not yet advertised)									
1 new position (not yet advertised)									
Faculty of Health Sciences									
Public Health (Maria Timofeeva)				Jan					
Clinical Research (Angela Chang)				Mar					
Molecular Immunology (Jesper Bonnet Møller)				July					
Molecular Immunology (in process)									
1 new position (not yet advertised)									
Faculty of Humanities									
History (Rosa Porto)	Oct								
History (Aglæe Pizzone)		Feb							
Study of Culture (Bryan Yazell)			June						
Design and Kommunikation (Marco Ragni)				Aug					
Language and Communication (in process)					Feb				
History (in process)					Sep				

Events at DIAS

DIAS Lectures: January 2020 till December 2020

At DIAS, we distinguish between Lectures and Guest Lectures. A lecture is given by a talented DIAS researcher who has achieved first-class honours and/or a certain level of reputation, while guest lectures are given by invited, non-affiliated researchers of international format.

- 5 February 2020:** Guest Lecture: *Sodomite, Gay, Queer, Trans: A 14th-Century Document and Its Afterlives*
By Professor Carolyn Dinshaw from New York University
- 22 April 2020:** Lecture: *Can we predict cancer risk and survival from gene expression? A Danish Twin Study*
By DIAS Fellow Maria Timofeeva
- 13 May 2020:** Lecture: *Why are consumers not biological beings? The Anthropos of consumption*
By DIAS Chair Søren Askegaard
- 20 May 2020:** Lecture: *Migration and Narrative Method in American Climate Fiction*
By DIAS Fellow Bryan Yazell
- 27 May 2020:** Guest Lecture: *Human Cell Atlas: Mapping the human body once cell at a time*
By Dr. Sarah Teichmann from Wellcome Sanger Institute
- 10 June 2020:** Guest Lecture: *From New Orleans to Jerusalem: Bob Dylan's Restless Farewell*
By Professor Sean Latham from University of Tulsa
- 26 August 2020:** Lecture: *The pandemic playbook: A physicist take.*
By DIAS Chair Francesco Sannino
- 2 September 2020:** Lecture: *Measuring disease burden globally and locally, and how Denmark can help*
By DIAS Fellow Angela Y. Chang
- 9 September 2020:** Guest Lecture: *A close quantitative look at the COVID-19 pandemic, placed in the context of historical pandemics*
By Professor Lone Simonsen from Roskilde University

- 16 September 2020:** Lecture: *Losing? The West and Modern War*
By DIAS Senior Fellow Sten Rynning
- 23 September 2020:** Guest Lecture: *Hooked: Art and Attachment*
By Niels Bohr-Professor Rita Felski from University of Southern Denmark
- 21 October 2020:** Guest Lecture: *The Sharing Economy: techno-dystopia or cyber-liberation?*
By Professor Juliet Schor from Boston College
- 4 November 2020:** Lecture: *The microbiota and its impact on human health and disease*
By DIAS Fellow Jesper Bonnet Møller
- 11 November 2020:** Lecture: *Why the average reasoner does not exist: Cognitive models of the individual reasoner*
By DIAS Fellow Marco Ragni
- 25 November 2020:** Lecture: *Presentation of the recent research on quantum materials at the QURE Group.*
By DIAS Fellow Gufei Zhang
- 2 December 2020:** Guest Lecture: *History of Child Welfare as a Present Political Concern*
By Professor Pirjo Markkola from Tampere University
- 16 December 2020:** Lecture: *Designing for situated knowledge in a world of change*
By DIAS Senior Fellow Nina Bonderup Dohn



Workshops, seminars and other activities

3 June 2020:

Research Meeting

DIAS invited all affiliated researchers to a meeting with a discussion of the pandemic on the agenda. Four internal and external researchers who were doing research on COVID-19 presented their work.

17 June 2020:

Workshop

Mike Young from the Mike Young Academy held the online workshop *Twitter and LinkedIn for researchers* for the DIAS affiliated researchers.

November 2020:

DIAS Virtual US Election Briefings

DIAS Senior Fellow Sten Rynning and Fellow James Rogers analysed the latest developments in the US Election in collaboration with international experts. These briefings were aired on the DIAS' YouTube channel.



Social Activities

Recurring Lunch:

Every Wednesday at 11.30 the DIAS affiliated are invited to meet and chat over lunch at the breakroom at the DIAS House.

Guest Lecture Dinner:

Guest lecturers are always invited to a dinner with 5-6 people at a restaurant in Odense after their lectures.

15 May 2020:

Online Friday Beer:

A casual event where DIAS affiliated brought a drink to Zoom meeting after office hours.

17 June 2020:

Lunch in the Sun:

To commemorate the finishing touches of the rooftop terrace at the DIAS House, the very first communal DIAS Lunch was held.

26 June 2020:

Dias BBQ:

BBQ at the roof terrace at the DIAS House.

Awards

Distinguished Professor:

DIAS Chair Kannan Govindan was awarded "Distinguished Professor in Supply Chain Management" at the 5th North American Industrial Engineering and Operations Management conference, 10-14 August 2020.

Best Paper Award:

DIAS Chair Kannan Govindan and group won the EURO Award for the Best EJOR Paper in the "Theory and methodology paper"-category, which was selected from 1053 articles from 2017-18, 14 September 2020.

Communication

strategy

2020-2022

Our overall target is to cement DIAS as an attractive and internationally acknowledged interdisciplinary centre for research with 25 affiliated fellows from all the five faculties at the University of Southern Denmark. This can be obtained by expanding the number of followers on our social media channels and the number of participants when hosting DIAS Lectures; in-person as well as online. That way we can increase the dialogue and manifest our spot as a centre for excellent research.

Our current Communication Strategy is based on 5 different target groups:

Target group: Potential fellows

We would like to communicate to potential fellows that DIAS has an attractive research environment and a community that help strengthen young researchers interdisciplinary research competences and network.



Communication goals:

- Increase the branding of DIAS researchers
- Increase the attraction of new fellows
- Increase the dialogue on social medias with national and international research institutions

Key activities:

- Ensure livestreaming and recordings of all DIAS Lectures so that they can be shared on our social medias, particular YouTube
- Work with employee advocacy and branding

KPI's:

- 90% of all lectures are livestreamed or recorded and shared on YouTube
- 75% of all DIAS researchers use social media as a tool in the promotion of their research

Target group: Fellows, Senior Fellows and Chairs

We would like to communicate to our affiliated researchers, that DIAS helps strengthening each researcher's career, network and international exposure and acknowledgement

Communication goals:

- Increase the publicity of DIAS and affiliated researchers in the news media, both in Denmark and internationally
- Strengthening of the communicative collaboration internally at SDU
- DIAS as a solid provider in interdisciplinary research related subjects

Key activities:

- Participate in the cooperation with additional communication managers from the other faculties and the Central Administration at SDU
- Have an ongoing dialogue with the affiliated researchers to ensure that we are notified about interdisciplinary activities and new research results so that we can promote it further.

KPI's:

- One press release every week about the affiliated researchers
- Have ongoing content on social media so that our followers get a feeling of being familiar with our fellows and Senior Fellows





Target group: National and international research networks

We would like to position DIAS as a channel for the most outstanding research in Denmark.

Communication goals:

- Increase the number of interdisciplinary activities for more media coverage
- Strengthening of employee advocacy on the affiliated researchers’ own social media channels
- Strengthening of the affiliated researchers’ networks

Key activities:

- Lead a close dialogue with the affiliated researchers to catch the interdisciplinary activities and communicate these
- Support and endorse site visits, visits from researchers and other activities that support networking, including media coverage when they happen

KPI’s:

- There will be made a manual for site visits and the like with collaborators and “how to”
- There will be made a procedure for media coverage for visits from researchers

Target group: Foundations and SDU Executive Board

We would like to communicate DIAS as a steady center that is able to deliver and with a full focus on interdisciplinary research and professional communication about the efforts

Communication goals

- Strengthening the coverage of the affiliated researchers on DIAS’ and the fellows’ digital platforms

Key activities:

- Strengthening of employee branding and advocacy
- Communication on selected results and collaborations regarding press releases
- Timing of applications to foundations and press releases

KPI’s:

- Communicative activities about DIAS as a permanent point on joint meetings with all affiliated

Target group: Broader public – nonscience press coverage

We would like to communicate that DIAS is a national center for excellent and interdisciplinary re-search.

Communication goals:

- Making the broader public aware of DIAS and our researchers
- Making general journalists and the media aware of our excellent researchers and their research
- Participation in public events in Denmark such as “Forskningens Døgn”, “Bestil en Forsker” and the like

Key activities:

- Making booklets for the broader public and share it in e.g. public libraries and the like
- Making and participating in podcasts
- Making video content for social media
- Sharing lectures on YouTube

KPI’s:

We have no current numbers to support a real development. Therefore, the current KPI’s for 2021 will be to see a general increase of participation on social media, enquiries from the media and participation from the broader public in our lectures.

KPI’s for social medias and PR

Based on the 5 target groups described above, we have set the following KPI’s for our social media channels and PR efforts:

Platform	Status (By March 2020)	Goal (By 2022)
Twitter	542 followers	1000 followers
	9842 impressions	+ 50%
Facebook	630 followers	800 followers
	Reach	+ 150%
	Followers’ demography	30% of followers must come from other countries than Denmark
LinkedIn	397 followers	500 followers
	28 unique visitors	+ 150%
	Followers’ demography	Southern Region Funen reduced to 30%
Press releases	Unknown	One every week (Danish and international medias)

Administration

Articles of Association

DIAS is run according to the articles of association, which have been approved by SDU's rectorate. In brief, the articles explain the duties of the DIAS Director, the composition and tasks of the Management Committee and the Advisory Board.

The procedures for election of DIAS Chairs and Senior Fellows as well as what is expected of them are described. The procedure for hiring DIAS Fellows, the funding and the expectations are described.

Finally, the tasks of the DIAS secretariat and a brief description of the budget and accounting is presented. The articles are in frequent use, and the secretariat develop procedures, which are shared with the administration at the departments to ensure alignment and transparency in the processes.

Funding

DIAS is supported by SDU corresponding to about DKK 2 million per year for administration and events. The 5 faculties at SDU each support the salary of 5 fellows each. There are currently 16 fellows in DIAS. Each DIAS Fellow receives DKK 1,5 million from SDU over a period of 3 years to support their research.

From 2021, DKK 2 million will be reserved to support research activities within DIAS, where DKK 1 million is from SDU and DKK 1 million is from the administrative budget in DIAS.

DIAS Staff

DIAS Director

Marianne Holmer, Dean of the Faculty of Science, SDU,
holmer@sdu.dk

Administrative Coordinator

Ane Kristine Coster, ankc@sdu.dk

Communication and Event Officer (on maternity leave)

Marie Elisabeth M. Dam, maed@sdu.dk

Student Assistant

Rikke Ulvedahl Carlsen, ruc@sdu.dk

Student Assistant

Christian Fobian Dalsgaard, cdal@sdu.dk

Secretary

Barbara Majewska Piric, bap@sdu.dk

Publications

by DIAS Fellows

in 2019

The following list is based on a report drawn from the SDU PURE-system and contains all publications by DIAS Fellows from January 1st to December 31st, 2019. Because of this delimitation only researchers who were affiliated with DIAS in 2019 are included.

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Syddansk Universitet
Campusvej 55
DK-5230 Odense

Telefon: +45 6550 1000
sdu@sdu.dk
www.sdu.dk

