

going Clobbal

The TUM Experience





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President of the Technical University of Munich

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Prof. Dr. Thomas F. HofmannPresident of the Technical University of Munich

Internationalization has long been one of the central pillars of TUM's identity as a university that is 'at home in Bavaria' as well as 'successful in the world'.

Our university might be deeply rooted in its regional and cultural heritage. However, we have developed a thorough understanding that our university has to connect the vast potentials of our local ecosystem with the equally tremendous opportunities that await on a global scale. Inspired by our university's TUM Agenda 2030 and supported by our local and regional partners, TUM seeks to deliver answers to some of the most pressing societal, technological and economic questions of our time.

As a truly global university, we have forged connections with the most innovative, renowned research and higher education institutions in the world. We thereby further advance our research, develop future-proof education models and foster collaboration and exchange back in our Munich and Bavarian ecosystem.

With our TUM Asia satellite campus in Singapore, our five TUM Global Liaison Offices on four continents, and the life bond with our worldwide alumni community, we shape impactful partnerships, attract exceptional talents to Munich, and ensure that the knowledge and innovations we create reach a global audience.

Through strategic international networks and flagship partnerships, TUM's global engagement offers unique framework conditions to develop and test unprecedented collaboration formats. Change is our constant, so we are striving to establish a truly European university across Europe through the EuroTeQ Engineering University. In addition, we are pioneering new models of training for the next generation of researchers with our flagship partner Imperial College London and empowering members of our administration to integrate international experience into their career paths via our Graf Montgelas Fellowships.

As these examples show, all members of our TUM community benefit from our manifold international activities, whether it be by collaborating with our partners abroad or through internationalization of our campus at home.

In this *going GLOBAL* brochure, we will provide you more insights into TUM's international engagement – *The TUM Experience* – highlighting our strategic networks and partnerships. We will also introduce innovative international projects and present opportunities to engage with TUM and our international partners.

We invite you now, as a member of the TUM community or as a partner and friend, to become part of our global TUM family and to extend your personal international outreach.

Thank you for joining us on our global tour!



Double-degree agreements (as of 2023)

79
TUM Ambassadors
(since 2013)





≈75TUM start-ups per year

44⁰/₀
International

201 ERC Grants*

Erasmus+ program:

number one position among German universities in its seventh consecutive year



34,000+

incoming and outgoing exchange students since 2013 55+
international TUM Global Visiting
Professor stays per year



257

international appointments of professors (2006 – 2022)



86,100+

alumni worldwide, of which 21% are internationa citizens and 12% live abroad in 139 countries, More than
200 TUM
Global
Incentive
Fund
projects
since
2017

18
Nobel prizes

Alexander von
Humboldt
Research Award
Winners*

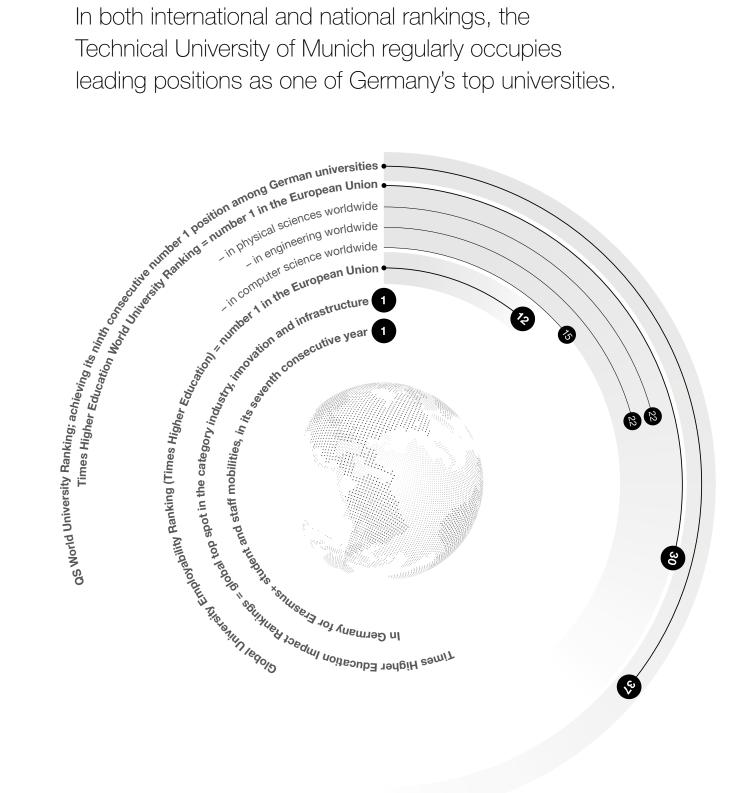
17

different languages and 500 language courses offered at the TUM Language Center* **800+** Patents since 2014

degree programs offered entirely in English

rankings

In both international and national rankings, the Technical University of Munich regularly occupies leading positions as one of Germany's top universities.





inking TUM v



ith the world

Holding On

"As a large group of 13 students from different European countries, we went from Copenhagen to the Danske Vadehavsøer. There, because of the rising tide, we did not have much time to take this picture, trying to hold on to each other standing on the poles – practicing teamwork." *Michael Meier, Danske Vadehavsøer, Denmark*

TUM GLOBAL OPPORTUNITIES

You are a TUM student, researcher, or staff? Stay up to date and benefit! Subscribe to our newsletter!



TUM Global Liaison Offices

What began 16 years ago with a grand vision has developed into a huge success story. The TUM Global Liaison Offices are TUM's vital link to the world.

Beijing



Brussels



Mumbai



TUM Beijing has been a longstanding facilitator, forming solid university and research cooperations and expanding existing cooperation with partners in China and Taiwan. It has played an important role in establishing the flagship partnership with the prestigious Tsinghua University. TUM Beijing not only reaches thousands of followers through its TUM Weibo account, its various events also attract a large and engaged local alumni community.

TUM Beijing
Click for
more information

TUM Brussels is the beating heart of TUM's strategic engagement within the EuroTech Universities Alliance and central in positioning the TUM brand within the EU and its institutions. It serves as a gateway to key European partners working jointly on the European research, education and innovation agenda. For TUM, the office is a great source for relevant EU initiatives and topics. It also offers applicants valuable advice on EU funding programs.

TUM Brussels
Click for
more information

TUM Mumbai is strategically located in the commercial hub of India, providing the TUM community with direct access to unlimited opportunities in India. Within its extensive network, the office showcases TUM's successful collaborations in India, highlighting the university's research excellence and entrepreneurial potential. It provides support for Indo-German initiatives, such as the current Indo-German Partnerships project (IGP).



network

Linking TUM with the world through our TUM Global Network: with five TUM Global Liaison Offices on four continents and our TUM Asia offshore campus in Singapore, we ensure global visibility, attract top talents to Munich and are able to connect with the best partners.

San Francisco



São Paulo



At the heart of North America's entrepreneurial culture, TUM San Francisco monitors and reports on trends in business and academia, while engaging its growing alumni network as well. The office promotes TUM's research and innovation topics in North America and intensifies TUM's links with top U.S. and Canadian institutions. As a first point of contact for TUM researchers and staff, it supports transatlantic projects and establishes contact with local stakeholders.



Firmly anchored in the dense science and research network that links Germany with Latin America, TUM São Paulo taps into the enormous potential that the continent holds in terms of research and teaching as well as in the start-up sector. Its focus is on expanding strategic collaborations with universities, research institutes and industrial partners and on supporting TUM in recruiting young talents in Argentina, Brazil, Chile, Colombia, Mexico, and Peru.



study & research in asia





TUM in Singapore Click for more information Working in small groups, our students at TUM Asia gain intensive teamwork experience.

network



TUM Professor Andreas Herkersdorf teaches students at the TUM Asia campus in Singapore.



Our researchers in the TUMCREATE project Proteins4Singapore will find food solutions for the future.

TUM Campus Singapore

At our campus in Singapore, we offer various excellent education opportunities in engineering and sciences at the technology hub of Singapore, and conduct research with international partners on technologies for a sustainable future.

UM Asia

The establishment of the first offshore campus of a German university in 2002 paved the way for our international reputation: TUM Asia – our teaching campus in Singapore. At TUM Asia, we bring TUM's excellent engineering education to Singapore – offering a very special combination of "German academic excellence with Asian relevance".

We cooperate with the best universities in Singapore and offer pure TUM degrees. Study programs include undergraduate and postgraduate degrees as well as continuing education opportunities for professionals and executives from the corporate sector. We are constantly adapting the curriculum to meet the needs and unique characteristics of the region.

Professors and lecturers from TUM regularly travel to Singapore to teach the circa 600 students on site, all professors being members of the TUM Asia Faculty. Many of the now more than 2,500 highly qualified graduates found employment in leading research institutions and companies around the world.

UMCREATE

Founded in 2010, TUMCREATE is a multidisciplinary research platform fostering collaborative research between TUM and world-leading universities, local institutions, public agencies as well as industry partners from the region. Funded mainly by the National Research Foundation of Singapore, TUMCREATE's multi-faceted research projects contribute to a sustainable transformation of societies through science and technology.

Current research topics span from food science and technology, urban mobility, biomedical technology and preventive care to solutions for a carbon-neutral megacity. Some 40 international researchers appreciate the unique community where multidisciplinary exchanges and opportunities are fostered, contributing to a sustainable future in the vibrant Southeast-Asian megacity.

Over the last years, the research teams presented more than 1,000 publications, with more than 70 successful doctoral candidates qualified for a career in research and industry. These achievements and the strong rapport established with its international partners reflect the institution's high-quality research output and societal impact.







TUM Senior Vice President for International Alliances and Alumni

interview

Juliane Winkelmann was Professor of Neurology and Neuroscience at Stanford University in California before being appointed Chair of Neurogenetics at TUM in 2015. Her research focuses on the genetic architecture and underlying molecular mechanisms of complex genetic diseases as well as rare neurological diseases with a special focus on movement and sleep disorders. Since 2017 she has been Senior Vice President for International Alliances and Alumni.

1

You've been Senior Vice President for International Alliances and Alumni since 2017. Looking back, what was the most memorable moment in your work?

Gosh, there are so many. One memory that stands out is my first visit to the African continent in 2018, to Kumasi in Ghana, where we officially concluded our TUM Global Strategic Alliance with Kwame Nkrumah University of Science and Technology (KNUST). Visiting new places is always exciting, but in this particular case, we met our counterparts in person for the very first time, and all the theoretical concepts and visions of our partnership came to life on this day. And the warm welcome or "Akwaaba" as they say in Ghana speaks for itself: I will definitely go again.

2

What do you enjoy the most about your position?

Definitely the people and the variety! I have the great pleasure to meet and work with many dedicated TUM students, researchers, staff, alumni and partners, who are really excited about international collaborations. Their enthusiasm is very contagious and has a truly rejuvenating effect (laughs). And I love that there is so much to learn – everyday. There is not a single dull work day, I can assure you. My agenda is full, but also fulfilling.

3

International cooperation can be challenging sometimes. What's your approach when the going gets tough?

... The tough gets going? No, but to have a good partner at your side – that will keep you going. In this sense it is important to maintain an open dialogue and not be afraid of addressing challenges. Only then can we establish trust-based partnerships. And stay flexible as you might need to revise and modify your plans to ensure there's mutual benefit.

4

Even though Covid-19 is no longer present through restrictions in our daily lives – what do you think we've learned from the pandemic?

The Covid-19 pandemic has taught us a valuable lesson: it is possible to develop international partnerships through digital means. For example, I enjoyed participating in numerous roundtables, meetings and conferences all over the world – from my home. And this will remain a central feature of our work, not least because of the growing importance of sustainability principles. But I think that although digital formats do work well in a certain context, they cannot replace the importance of personal contacts, especially when initiating collaborations.

5

On a final note - what is your take-home message?

To appreciate and never forget our regional roots. This goes hand in hand with showing deep respect for the partners' local communities and ecosystems. Only with a good understanding of local needs can we successfully collaborate.

TUM is involved in various partnerships and alliances to optimize its international cooperations: Through flagship partnerships, TUM deepens its often decades-long ties with leading universities in common fields of expertise. Strategic networks with selected partners in Europe enable innovative cross-border cooperation. Global Strategic Alliances pave the way for joint efforts.



partnersins

Imperial College London

Flagship Partnership

TUM and Imperial

Joining Forces for International Excellence

The flagship partnership with Imperial College London is the first of its kind. It was formed in 2018 to advance excellence in research and education and to jointly develop premium internationalization formats for students, faculty, and staff.



TUM and Imperial are among the most entrepreneurial universities in the world and perfect partners for collaboration with matching profiles regarding their subject portfolio, research performance, and ambitions. Imperial and TUM offer seed funding to initiate collaborative projects; on average, ten new collaborations in research are brought to life each year. This trust-based partnership and the manifold existing contacts offer a sound platform for developing unprecedented activities. For example, innovative virtual and blended teaching provide students opportunities for international experiences beyond traditional study abroad stays.

A further endeavour is the European Talent Academy, a networking event for early-career researchers from TUM and Imperial, working in a common research area that delivers insights into the European research landscape. In virtual sessions and an in-person workshop in Brussels,

they gain opportunities to network, pitch research projects, present case studies and learn from external speakers with knowledge of research funding schemes and EU research policy.

The unparalleled Joint Academy of Doctoral Studies (JADS) co-develops cross-disciplinary clusters of PhD students who have access to world leading academic supervisors and state of the art facilities at both institutions, working across fields where both institutions have taken a global lead in researching, innovating, and breaking down disciplinary boundaries.



TUM President Hofmann and representatives of the TUM Board welcome the Imperial leadership to Munich.



"The TUM - Imperial partnership offered me the opportunity to work with students from all around the world on a distributed software engineering project. I made valuable connections, learned about different work cultures and made new friends. I am still in contact with our project instructor from Imperial, who taught me about their exciting research, and I plan one day to go there for an exchange semester."

Hanva Elhashemv

TUM Master's student in Informatics | Participant in the seed funded teaching project *Joint Advanced Student School*



Flagship Partnership

TUM and Tsinghua University

Innovating in the Heart of Europe and at the Pulse of Asia

For almost thirty years, TUM and Tsinghua University have been working together across diverse scientific disciplines. Now they have embarked on a new era of their partnership.

Connecting researchers and talents across disciplines, the TUM-Tsinghua flagship partnership focuses on fostering

new relationships in future-oriented research areas with broader societal relevance, e.g. new mobility concepts, machine learning, or smart manufacturing. A lively student exchange and a regular summer school provide ample means for young talents to form their own networks and benefit from the institutional partnership. Moreover, long-standing joint activities in areas related to executive training and entrepreneurship allow for the partnership to further advance broader institutional engagement.

After nearly three decades of cooperation, Tsinghua and TUM have now set out to deepen their relationship in fields of mutual strategic interest - by linking the dynamic ecosystems of Munich and Shenzhen and their talent pools. In the future, the flagship partnership will expand the scope of inter-institutional collaboration by including the Tsinghua Shenzhen International Graduate School in the cur-

rent collaboration framework. Providing new platforms for cooperation between the two partners, the new arrangements, including double degree programs and expanded student exchanges, as well as new initiatives to stimulate further institutional development, open up a wealth of opportunities for research talent, aspiring entrepreneurs and lifelong learners from Munich and Shenzhen.

TUM delegation visiting Tsinghua SIGS in Shenzhen



"The big questions of the future can only be addressed on an interdisciplinary basis, working in close cooperation at the international level," says TUM

"We are delighted that two outstanding global universities will now strategically pool their strengths based on the spirit of trust we have built up over many years."



TUM's flagship partnership with Tsinghua University Click for more information

partnerships



Flagship Partnership

TUM and UQ

Tackling Global Challenges Around the Globe

The TUM-UQ partnership is an excellent example of cooperation at the highest levels from the furthest possible distance. Following years of successful joint research, both sides are keen to promote topics of great social relevance even further in the future.



Bioeconomy Symposium at UQ in Brisbane

With The University of Queensland, one of Australia's top-ranked universities, TUM has enjoyed a very special relationship since 2010, before it was officially sealed as a flagship partnership in April 2021.

Despite the geographical distance, the TUM-UQ bond swiftly developed into a collaboration spanning a variety of disciplines and featuring a wide scope of activities. In addition to numerous joint research projects and symposia, a range of mobility programs for students and administrators also continue to drive forward the exchange and cooperation between the two universities at all levels. The partnership gained prominence and breadth particularly through the many joint projects in the field of bioeconomy.

In 2018, these activities took formal shape with the founding of the Global Bioeconomy Alliance by TUM, UQ, and their Brazilian partner UNESP. TUM and UQ have joined forces in new focus areas such as digital agriculture and AI, as well as environment, climate change, and health. Partnership initiatives have also been launched in the field of hydrogen and green energy – a topic high on the research agenda of both countries. Reciprocal visits and joint workshops help form interdisciplinary teams of scientists from UQ and TUM to develop future collaborations in these cutting-edge areas and fulfill their institutions' mission to address global challenges.

Strategic Alliance

GBA

Global Bioeconomy Alliance

The Global Bioeconomy Alliance (GBA) between TUM, São Paulo State University (UNESP), and UQ provides an efficient platform for cooperation and for identifying academic as well as industrial partners for joint projects since its official foundation in 2018. One prime example would be the BioTrim project, in which researchers from TUM and UNESP have joined forces with European and Brazilian industrial partners to valorize biogenic polymers by their enzymatic modification. In 2023, Denmark Technical University joined the GBA Association as a fourth founding member. The GBA will add further members from around the world to bring bioeconomic progress to all regions of the world and contribute to the achievement of the UN Sustainable Development Goals.



Strategic Network

EuroTech Universities Alliance

In the heart of Europe, TUM and its partners in the EuroTech Universities Alliance are shaping the European educational agenda. For over 10 years now, we have been addressing the knowledge square – of teaching, research, scientific innovation and interaction with society – through manifold initiatives including the EuroTeQ Engineering University, which brings engineering education to the next level.

Empowering society

The EuroTech Universities Alliance is a strategic network of leading European universities of science and technology, joining forces to build a strong, sustainable, sovereign, and resilient Europe. TUM is one of its founding members. The alliance origins date back to 2006, but activities have increased enormously since we opened our joint office in Brussels in 2011.

Today, EuroTech also consists of the partners Technical University of Denmark (DTU), École Polytechnique Fédérale de Lausanne (EPFL), École Polytechnique (L'X), Technion – Israel Institute of Tech-

nology and Eindhoven University of Technology (TU/e).

Together we aim to educate the best talents in science and engineering, to become innovators and change agents of society. We conduct first-class research – with shared research infrastructure and a great track record in acquiring EU funding – to make major contributions to the grand societal challenges we face today. To further

increase our common output, we have defined five "Initiatives@Scale", which we seek to significantly advance by 2025. These initiatives entail ambitious, unprecedented joint efforts at a scale difficult to achieve for one partner on their own. Here, EuroTech aims to promote the 17 United Nations Sustainable Develop-

ment Goals, contribute to Europe's digital sovereignty and address the vital issue of sustainable campus development.

While the majority of EuroTech's activities focuses on internal col-

laboration, we advocate at European level for topics that are particularly close to our hearts. We are convinced that the united voice of six strong universities of science and technology can make a valuable contribution to EU policymaking. And with its top-down support by TUM leadership and bottom-up possibilities and services, EuroTech University Alliance offers opportunities for the entire TUM family. We invite you to join our dynamic network.







partnerships

European engineering education of the future

The EuroTeQ Engineering University unites six excellent Technical Universities and two renowned Business Schools. Funded under the prestigious European Universities Initiative by the European Commission since 2020, this alliance introduces a paradigm shift in engineering education. We are implementing an unprece-

dented approach to collaborative teaching and learning that not only brings together various countries and engineering cultures, but also a broad coalition of stakeholders in industry, society and both academic and non-academic education. Our belief: new ideas occur from merging different per-

spectives, thematic fields, skills and competences, leading to innovation.

The EuroTeQ Engineering University offers training and international learning programs to students, teachers

and staff members of the partner universities, but also actively engages vocational and professional learners. Students can take courses from the partners through virtual and blended learning opportunities and engage in interactive student challenges, the EuroTeQ Collider. Our flexible qualification paths include joint

formats for continuing education for learners with academic and non-academic backgrounds, offering Micro-Credentials and an executive program. This way, we keep the workforce up to date with state-of-the-art knowledge.

The meaning "Engineering University" is thus twofold: To provide excellent education to future engineers and to engineer the University of the Future, as a role model for the European Higher Education Area and beyond.

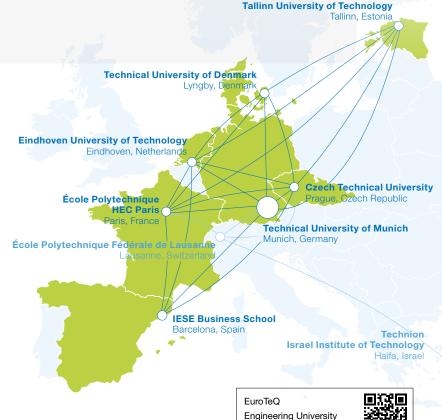




'Our vision has been translated into tangible projects by energetic and creative working groups. Together with fantastic partners from science and industry, we have co-created great impact. Across EuroTeQ part-

ners, our group spirit creates an enormous motivation to find sustainable solutions for new formats of engineering education of the future."

Prof. Dr.-Ing. Gerhard MüllerTUM Senior Vice President for Studies and Teaching



Click for more information

partnerships

Strategic Alliances

An Indo-German Partnership Project

With the Indo-German Partnership (IGP) project Exploration, TUM and two premier Indian Institutes of Technology (IITs) are driving joint research in the fields of Climate, Environment, Energy, Mobility, and Transportation and are exploring further opportunities.

Exploration has developed new and sustainable formats for different institutional spheres since its kick-off at the end of 2020. The IGP project is funded by the DAAD and the Indian University Grants Commission. On the TUM side, it is under the leadership of Prof. Miranda Schreurs for Climate, Environment and Energy and Prof. Constantinos Antoniou for Mobility and Transportation.

TUM has maintained close partnerships with the IITs in Bombay and Kharagpur for almost 20 years. In the IGP project, these relationships are being transformed into research platforms for members of the three participating

universities, but also for their broader regional and national communities. Enhancing opportunities for collaboration at both the senior scientist and young talent levels has generated new cooperation formats and tangible outcomes.

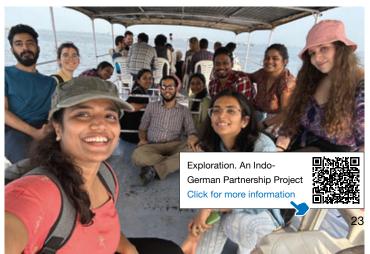
Annual IIT x TUM Research Forums bring together researchers and students from all three institutions to discuss Climate Policy & Action, Common Risks and Shared Pathways to Sustainability, Energy Mobility Nexus as well as Urban Mobility.

An Indo-German student competition and yearly winter schools at IIT Bombay promote student engagement across all three IGP partners. These formats help students and young researchers establish strong academic links and introduce them to a globalized research environment. Exploration's early days were entirely digital. In 2022, the first activities could be carried out in person again.





Above: IIT Kharagpur-TUM joint research center Right: Participants of the IGP Winter School during a field trip in the Kerala backwaters.



Strategic Alliances

KNUST-TUM Partnership



A Partnership for Innovation and Sustainable Development

TUM and Ghana's top university Kwame Nkrumah University of Science & Technology (KNUST) have been collaborating for several years to develop new solutions to global challenges. Particular focus for the partners lies on advancing projects in innovative teaching, research, and entrepreneurship. Having worked together for many years on future-oriented topics, KNUST and TUM joined forces at the end of 2018 to form a strategic partnership with a strong focus on sustainability. Located in Ghana's lively second-largest city Kumasi, KNUST is one of the most renowned institutions in Africa and has been recognized as the best university in the world for the provision of quality education (Sustainable Development Goal 4) according to the Times Higher Education Impact Rankings 2023.

A prime example of best practice is the TUM SEED Center, where both partners, in cooperation with eight more universities of the Global South, research and teach at the intersection of sustainable energies and entrepreneurship in the Global South. The partnership between the Klinikum rechts der Isar and the Komfo Anokye Teaching Hospital is a further success story. A newly launched joint project within this framework focuses on using minimally invasive

surgery methods to treat gynecological diseases. With the Circular Medical Plastics Engineering Project, TUM and KNUST have intensive teaching and research around reuse strategies for medical plastic products. In Artificial Intelligence (AI), TUM and KNUST researchers are developing a knowledge hub focused on the responsible use of AI.

In 2023, TUM and KNUST launched the TUM. Africa Talent program. Within this program, doctoral candidates from sub-Saharan Africa and TUM work together on research projects at the TUM host chair and start to form a sustainable cooperation network. For this purpose, the TUM Graduate School, in collaboration with the TUM Global & Alumni Office, offers a supporting framework program with transferable skills workshops, networking events, and discussions with experts on a specific focus topic.

These and many more projects and a very active student exchange via our TUMexchange program demonstrate that KNUST and TUM share a common vision: an interdisciplinary and participatory approach to innovative, impact-oriented solutions for sustainable development in Ghana and beyond.

"Studying in Munich ranks high in my life experiences. Allowing students to take courses at TUM and KNUST goes a long way in shaping our collaborative and multicultural mindsets while creating a platform



for other projects and research exchanges for both universities. Personally, this experience validated my competencies and made my career path clearer."

 $\textbf{Obeng Okofo Dartey} \mid \mathsf{KNUST} \ \mathsf{Master student} \ \& \ \mathsf{exchange} \ \mathsf{student} \ \mathsf{at} \ \mathsf{TUM}$



partnerships

KNUST delegation with Vice-Chancellor Prof. Rita A. Dickson (left) during a visit to TUM. TUM's partnership with KNUST Bringing electro mobility to rural Africa with the aCar,

a battery electric small utility vehicle.

Countless TUM students, employees and academics are working in projects in developing countries, trying to find sustainable solutions to global challenges – including ways to provide energy and food while conserving resources. In the following pages, we provide you a glimpse of the manifold activities.





sustainable



GHANA

Kwame Nkrumah University of Science and Technology

ETHIOPIA

Bahir Dar University

KFNYA

Jomo Kenyatta University of Agriculture and Technology

UGANDA

Makerere University

NAMIBIA

Namibia University of Science and Technology

INDONESIA

Bandung Institute of Technology

INDIA

Indian Institute of Technology Bombay

Pontificia Universidad Católica del Perú



TUM SEED Center Scientific Directors and TUM Senior Vice President Juliane Winkelmann at the Annual Symposium 2023 at KNUST in Kumasi, Ghana.



TUM SEED Center

Excellence in Development Cooperation

Combining strengths in research, innovation, and education at the intersection of sustainable energies, entrepreneurship, and development.

The TUM SEED Center is one of seven Excellence Centers for Development Cooperation funded by the German Academic Exchange Service (DAAD) and the Federal Ministry for Economic Cooperation and Development.

The SEED Center family are TUM, led by Director Prof. Dr. Frank-Martin Belz, and eight outstanding partner universities from the Global South. Together they co-create solutions for sustainable development in the Global South, thus actively contributing to the 2030 Agenda for Sustainable Development by the United Nations. The Living Labs form a core element of the SEED Center and are located in the partner countries. They are decentralized energy systems in rural areas, e.g. mini-grids developed together with the local communities providing hands-on teaching and interdisciplinary research opportunities. The TUM SEED Center also features a doctoral program at TUM for excellent candidates from the Global South and the development of an international and offering an international and interdisciplinary technical specialization on Sustainable Energies in TUM's flagship program M.Sc. Management and Technology.

Building of the TUM SEED Center mini-grid at the Ugandan village of Kyampisi together with Makerere University.



COLOMBIA

engagement

TUM without borders Projects

Techdalo

Enabling Colombian students to pursue a career in IT

Colombia is a country that gravely suffers from income inequality. A sizable amount of the population cannot afford proper education due to poverty. Since 2019, Techdalo, with the support of the TUM Global & Alumni Office, has been enabling Colombian students from low-income backgrounds to receive training in web development and helping them transition to full-time careers in the field. The training takes place in collaboration with the Bogota Institute of Technology (BIT). Additionally, Techdalo provides one-on-one mentoring and workshops for the students. Students also have the opportunity to benefit from additional resources that Techdalo offers to boost their portfolio. Upon completion of training, students can receive oneon-one coaching and attend workshops specifically designed to help them find a suitable job and transition into the working world.



The Techdalo team on location in Colombia, making important contacts with schools and companies.

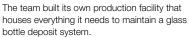




A great success: two students landed jobs with the skills they acquired at Techdalo.









During the trips to the Thai island of Ko Kut, the Glassic team completed their problem research, formed partnerships with local entrepreneurs, and found their first customers.

TUM without borders Projects

Glassic

For a world free of plastic pollution

Glassic rethinks consumer products to tackle plastic pollution in Southeast Asia right at the root. The team's work begins with producing mineralized drinking water, which is then filled in reusable glass bottles that they deliver and collect using their own logistics. This ensures an entirely circular economy and saves over 95% of carbon emissions compared to current alternatives. Through the support of the TUM Global & Alumni Office, the project team was able to make two essential trips to the project site in Thailand. These trips enabled the Glassic team to verify the business concept and establish the first business on Ko Kut Island, Thailand.





sustainable engagement

TUM without borders Projects

TU eMpower Africa on site

High-level workshop programs and engagement with the local communities

TU eMpower Africa e.V. is a student initiative of TUM students and alums working on Energy-Water-Food nexus projects in Sub-Saharan Africa. Through generous support from the TUM SEED Center and the TUM without borders project, a delegation of students got the chance to participate in the TUM SEED Annual Symposium at the KNUST (s. page 24) in Kumasi, Ghana. The team delivered a set of high-level workshop programs designed to build capacity and skills in eight students of the TUM's partner universities in the Global South to be able to start similar student initiatives in their home universities targeting sustainable development of rural communities through entrepreneurship and the use of renewable energies.

TU eMpower Africa e.V. also used this time in Ghana to visit and engage with the local communities in two of its project sites in Ghana. Site one, established by Florian Ott, is in the smallholder farmer community Namiyela (Northern Ghana) whereas site two led by William Aguirre-Ráquira, is located in Ejura (Central Ghana). The team members met with the local chiefs, local institutions and in Namiyela, women farmers were invited to partner with the student NGO and discuss the implementation and operation of a solar powered irrigation system to enable all year round farming and access to clean water.

"Our new projects in Ghana not only focus on using renewable energy to create access to groundwater for irrigation all year round, but we have a strong social impact through supporting communities of women farmers. Moreover, we see the incorpora-



Florian Ott during a visit at the the KNUST TUM SEED Living Lab.

TU eMpower Africa Click for more information



tion of Agroforestry as a key enabler for long-term environmental sustainability. We look forward to scaling our existing projects and expanding to new countries to create a more sustainable world for all. Being part of TU eMpower Africa has allowed me to collaborate with diverse groups of passionate young individuals and experts, fostering an environment of shared learning and growth. Working with an extremely passionate and committed team makes me feel grateful! It's a journey that has enriched my life and reaffirmed my belief in the power of collective action to drive positive change on a global scale."

Florian Ott
Financial Head and Ghana team lead

Left: TU eMpower Africa visits Namiyela in collaboration with KNUST and Ghana Permaculture Institute.

Middle: Emmanuel Sebiyam, friend and chief of Namiyela, discussing the energy-water-food concept with future members of the women's farming cooperative.

Right: Visit to the Ejura site to sample soil and water in the field and interact with farmers and the local chief.









With its worldwide achievements, network, partnerships and sustainable engagement, TUM is continuously contributing to a global hub of knowledge exchange. Now, we invite you – students, staff members, junior and senior researchers and alumni – to learn more about numerous international opportunities at TUM, designed specifically to your academic profile.





students:



Through well-established exchange programs such as Erasmus+, TUMexchange, ATHENS and other funding opportunities, the TUM Global & Alumni Office offers you various possibilities to gain international experience abroad and at home.

Erasmus+ program

Would you like to get to know your European neighbors and expand your professional, linguistic, and intercultural skills? Take part in the Erasmus+ program! Every year, TUM enables thousands of students to spend an unforgettable stay abroad via the EU-funded program. Erasmus+ provides financial support for study or internship stays and there are no tuition fees at the partner university.





TUMexchange

See the world with **TUMexchange!** If you are interested in a stay outside of Europe, TUMexchange is the right program for you. With 150 partner universities in 26 countries, TUMexchange offers Bachelor's and Master's students of all disciplines the opportunity for a study-related stay abroad at selected partner universities in non-EU countries.

ATHENS

The **ATHENS** program offers you the chance to study at a leading European technological university for one week. The stay includes an intensive course in engineering, natural sciences, economics, political science and other fields at one of the 24 ATHENS partner universities. The courses take place twice a year. They are complemented by an individually designed cultural program to immerse you in a different culture. Participation in the program is free.



ATHENS NETWORK ADVANCED TECHNOLOGY HIGHER EDUCATION NETWOR

International Campus Life program

Every year, TUM welcomes more than 1,500 international exchange students from our partner universities all over the world. They study at one of the TUM Schools for one or two semester and immensely enrich TUM's international campus life. The TUM Global & Alumni Office, our central departments as well as all TUM Schools offer a multitude of programs to facilitate the newcomers' orientation and integration at TUM and help build a strong community with all members of the TUM family. The programs are open to all TUM students. Whether you are here on exchange, or if you are a local or international degree-seeking student - or also staff interested in experiencing TUM vibrant international campus life: Join in, the global TUM family is looking forward to meeting you!

Additional opportunities include:

Scholarships and grants for stays abroad

TUM Global & Alumni Office offers you numerous scholarship programs, enabling working on your final thesis abroad, study-related group travel, and academic activities in developing countries.

Equal opportunity and green travel grants

An additional funding opportunity via Erasmus, which focuses on personal and socio-economic criteria and/or a sustainable stay abroad.

Departmental partnerships

TUM schools and departments maintain their own student exchange partnerships – you are welcome to apply.

Double degree programs

Study at a partner university abroad and acquire a second degree in addition to your TUM degree.

Study virtually within the EuroTeQ network

Through a joint course catalogue, you can participate in virtual courses at the EuroTeQ partners and at TUM itself.

staff:

TUM offers its employees opportunities for a work-related stay abroad: Through the Montgelas Program and Erasmus+, you can pursue continuing education and training, either with an organization of your choice or a partner university.

Gaining Professional Experience throughout Europe or Worldwide



For one week, Marina Schreier, Communications Coordinator TUM G&A, became part of the UQ Global Communications team.

Erasmus+ staff mobility

Broaden your horizons, deepen your skills and gain international experience with the Erasmus+ staff mobility program. You can spend a stay abroad in Europe or even worldwide with financial support to cover your costs. Take advantage of TUM's international network with its partner universities and institutions. Collaborate with scientists around the globe or teach foreign students in your field of research. Or learn best-practice approaches from your international colleagues – the program really offers a wide range of possibilities.





Magnus Strobel during his Erasmus+ stay at Stellenbosch University in South Africa.

Thanks to Erasmus+ I had the privilege of teaching my seminar on behavioral economics at the Australian National University (Australia) and the Stellenbosch University (South Africa). Local students and academic helped me to integrate perfectly into campus life experiences, which enabled me to develop both professionally and personally. Regarding my future, the Erasmus+ stays taught me that I can prove myself all over the world and that I can easily consider a long-

Maximilian Graf Montgelas Program

Are you interested in learning how administration works at leading universities and enterprises within TUM's global network? Benefit from the Maximilian Graf Montgelas Program which has been designed as part of the TUM Agenda 2030 to promote an international approach in university administration. As a Montgelas Fellow you will undertake a self-designed practical stay at a renowned TUM partner institution, working with peers abroad, and afterward share your knowledge with your TUM colleagues. The virtual Montgelas Workshops on current topics, such as Hybrid working in administration or Fostering inclusion in services complement the program and offer opportunities for joint training and exchange with research administrators worldwide.



researchers:



The TUM Graduate School supports gaining international experience through numerous programs and individual funding opportunities.



Tobias Teschemacher

doctoral candidate at the Chair of Structural Analysis TUM School of Engineering and Design

"Thanks to the TUM-GS and the TUM-UQ Joint Supervision program I had the great opportunity to spend a period of my doctoral

research at the University of Queensland to conduct research in the groups of Prof. Dr. Dilum Fernando and Prof. Dr. Alexander Scheuermann. The beginning of my stay was driven by various get-to-know presentations and discussions, which were quickly followed by jointly processed research supported by local industry. Due to the facilities and the support from the UQ staff, I was able to conduct a large experimental test program, which was an essential part of my doctorate. During my entire time abroad, I had the best and always quick support from the TUM-GS and the UQ-GS, which was definitely needed once the global pandemic came along and caused many difficulties."

International Programs and Funding for Doctoral Candidates

From joint supervision and research exchange programs to summer or winter schools with international partners – as a doctoral candidate you can choose from a wide range of programs to equip your scientific career path with an international track. Or do you prefer a more individual approach? Then TUM Graduate School (TUM-GS) can also provide you with different funding models to support your research stays and the participation in international conferences and workshops. Building on TUM's global network, TUM-GS is constantly developing new collaboration schemes to expand internationalization offers and support for you.



EARLY-CARF

researche

Interested in joining TUM as an early-career researcher? The TUM Talent Factory supports TUM postdocs and external researchers with a comprehensive program.

TUM Talent Factory for Postdocs







The TUM Global Postdoc Fellowship enables young international researchers to conduct individual research projects together with a TUM host professor.

You are an early-career researcher and would like to stay informed about relevant calls and activities at TUM?

Register for the Postdoc Newsletter on the TUM Talent Factory website. With the prestigious TUM Global Postdoc Fellowship, up to ten international early-career researchers are offered the opportunity to conduct research at TUM. For two years, the fellows are supported by TUM to strenghten their research profile at a TUM department and to initiate new research projects together with outstanding TUM host professors. The fellowship makes it possible to conduct an individual project of your choice while gaining scientific independence at an early stage of your career. Among other things, the TUM Talent Factory supports the fellows with their applications for third-party funding to extent their research stay at TUM.

As a postdoc or research group leader at TUM, you will profit from a wide range of support from the TUM Talent Factory: from transferable skills workshops, flexible online learning tools, the Munich Postdoc101 Talk Series to information guides for new postdocs.





ATHENS and EuroTeQ International teaching opportunities

There are a number of formats that give you the chance to try out new teaching methods and recruit excellent students from all over the world. The ATHENS network with 24 leading technical universities, and TUM the only German one, offers a unique short-term exchange program. The week-long sessions take place twice a year, in March and November, offering students from the partner universities the opportunity to attend intensive courses and an inspiring cultural program. The EuroTeQ Course Catalogue offers students from the EuroTeQ partner universities (s. page 21) a wide range of virtual and blended learning opportunities across the partner institutions. If you are interested to open up your courses for excellent students from the EuroTeQ partner institutions, or offer a course for an ATHENS session, get in touch with us!

Study at TUM through EuroTeQ Click for more information

TUM PREP

Matching excellent students for your research project

Become a supervisor in the Practical Research Experience Program (TUM PREP)! Restarting as of summer 2022, TUM PREP offers you the opportunity to attract excellent Bachelor and Master students from selected, topranked universities from the US, Canada, and the Imperial College London. For eight weeks, the TUM PREP participants will work exclusively on your research project. Their stay is funded through a scholarship from the German Academic Exchange Service (DAAD) and accommodation is pre-arranged. Your PREP students will also profit from a great framework program provided by the TUM G&A – including orientation days, cultural activities, as well as a buddy for individual support.

The main objectives of TUM PREP are to strengthen research collaborations, to foster partnerships with Anglo-Saxon universities – as well as to recruit excellent students for master or doctoral studies at TUM.

Elliot Vaughan (right) during his research stay at the TUM Chair of Soil Science of Prof. Kögel-Knabner (2nd from left).

"The TUM PREP experience was a greatopportunity to meet a new group of fellow students and scientists, and learn new methods and techniques all while getting to spend a summer in Germany. I felt fully welcomed both in the scientific and social communities."

Elliot Vaughan

University of Wisconsin - Madison



researche

How about financial support for developing or strengthening your worldwide cooperation?

Then apply for the TUM Global Incentive Fund, the central seed funding scheme for fostering international relationships.

Looking for a funding opportunity to host your international partner at TUM?

The TUM Global Visiting Professor Program is the tool to attract brilliant academic talents for a temporary teaching or research stay.

TUM Global Incentive Fund Supporting your cooperation around the globe

TUM Global Incentive Fund (TUM GIF) offers you two funding lines: strengthening TUM's strategic partnership engagement, e.g. with Imperial College London, the Kwame Nkrumah University of Science and Technology and many more, and/or supporting collaborations with international partners irrespective of location, thus encouraging even more bottom-up initiatives. From joint publications, research, or teaching projects, networking events or facilitation of third-party funding acquisition – numerous collaboration ideas with international partners are eligible. Be sure to submit your idea and become part of a great success story: Thus far, TUM GIF has funded more than 200 collaborations between TUM scholars and scientists with over 100 international partners.

TUM Global Visiting Professor Program

Eligible activities include conducting block seminars together, writing joint publications, preparing proposals for third-party funded projects, or developing international masters programs. The duration of stay is rather flexible as well – from one week to three months. With approximately 60 short term stays of international scholars and researchers per year, funded by the Bavarian State Ministry for Science and the Art and under the Excellence Strategy of the Federal Government and the Länder, the program contributes substantially to internationalizing curricula and enriching the vibrant research culture at TUM.

"Thank you for making Prof. Shannon's stay at TUM possible! The entire experience with the TUM Global Visiting Professor Program was very positive. Prof. Shannon was particular happy about all the help he received in finding a place to stay and support on various practical matters. Our group and the Physics Departments strongly benefitted from Prof. Shannon's presence and inspiring discussions with him as well as his group members who visited frequently."

Prof. Frank Pollmann on the stay of Prof. Nic Shannon, Okinawa Institute of Science and Technology 2018/2019







Do you fancy high-risk research projects with top-class international scientists?

Then take advantage of the funding opportunities at the Institute for Advanced Study (IAS).

Are you an international postdoc, guest professor, or a TUM host?

We help researchers integrate smoothly into TUM's academic life.

Fellowships for highprofile visiting scientists

As a TUM professor, the IAS invites you to nominate international researchers from both academia and industry for a joint three-year research project through its fellowship programs. Your fellow will profit from extended visits at TUM, funded research and travel expenses as well as a jointly supervised doctoral candidate at TUM. A number of fellowships are sponsored each year by Siemens AG, the TÜV Süd Foundation, and the Nemetschek Innovation Foundation.

With more than 210 fellows from 26 countries on five continents, the IAS plays a core role in attracting high-ranking international scientists for joint collaborations, and in kick-starting ambitious research projects which are at the forefront of their fields.

Welcome Services for International Researchers Your central point of contact

We offer individual consultations – digital and face-to-face – on relocation topics before and after arrival in Munich, and arrange other helpful contacts.

Be sure to profit from valuable insights thanks to our information and networking events, such as meet & greets for new postdocs or "Meet the expert" events providing valuable infor-mation about taxes or the health insurance system in Germany. Furthermore, we assist with the social integration of our international researchers and offer a monthly cultural program where you can meet like-minded people and discover the beauty of Munich and Bavaria.

left: Exchanging ideas at IAS: Local and international scientists at different stages of their careers right: The Welcome Services team is the central point of contact for the campuses in Munich, Garching, and Freising.







Be part of TUM's worldwide alumni network!

Alumni groups

Regional networking works particularly well where alumni are active locally and organize alumni meet-ups, such as informal get-togethers and one or two special events per year.

Volunteer to become a mentor

At TUM Mentoring, alumni provide support to students, doctoral candidates or other alumni in a format of their choice. They are available to answer student questions and assist them in their personal development.

Volunteer to become a speaker

At our career and mentoring events, alumni share their professional and life experience, provide insights into working in specific professional fields and offer advice on how to launch a successful career.

Alumni are opening doors

TUM Alumni work in interesting places all over the world. Many are happy to open their doors to other alumni and show them around.

Events

As a TUM Alumni, you are always welcome to attend numerous TUM events. In addition, there are exclusive events organized just for TUM Alumni, such as the jubilees, where all alumni who completed their career at TUM 25, 50 and 60 years ago will be celebrated.

TUM Online Community

The TUM Online Community is the place to connect to students and alumni worldwide. Find old university friends and exchange ideas in one of the various interest groups.

Career counseling

TUM's Career Service offers professional advice and support in career planning: career webinars, online CV check, TUM job portal, and personal advice. It is a life-long service for all alumni.



language center:

The TUM Language Center plays a central role in the internationalization initiative of the Technical University Munich. We offer students and staff diverse opportunities to develop competence in a foreign language in addition to professional communication skills. Our program strongly emphasizes intercultural communication in the context of scientific research while staying at the forefront of educational innovation.

Discovering cultures, communicating science and preparing for international collaborations:

Arabic

Danish

Dutak

_ .. .

HEHICH

German

Hebrew

Italian

Japanese

Korean

Norwegiar

Portuguese

Russian

Spanish

Swedish

Turkish

Courses in 17 languages

There is a course for every linguistic taste: Our teaching program includes courses in 18 different languages at all levels of the Common European Framework of Reference. With us you can learn Arabic, Catalan, Chinese, Danish, Dutch, English, French, German, Hebrew, Italian, Japanese, Korean, Norwegian, Portuguese, Russian, Spanish, Swedish, and Turkish.

Writing skills in German and English

For our professors, students, and staff, we offer various programs to improve writing skills in English and German.



Strengthen your intercultural communication skills through taking part in our seminars.

German Writing Assistance

As a TUM student or scholar, you can receive help with your academic writing projects. We advise you during all phases of the writing process (planning, wording, editing).

English Writing Center

The English Writing Center offers free one-to-one consulting. We use your own English texts as our raw material to develop your competence in written English.





Helps students help themselves: Natasha Wellershausen from the English Writing Center.

English Coaching Program

This program offers tailored support to professors, academic staff, and doctoral candidates who use English in their work at TUM.

German courses for faculty and staff

If you work or do research at TUM during the day you can learn German in the evening in our program "DaF for Staff".

TUMtandem

Take advantage of the tandem learning method which enables two people to learn the other's language in an autonomous and collaborative manner.



TUM student Alexander Kophal learns the language of his native-speaking tandem partner and exchanges ideas online.

Intercultural Communication

Intercultural competence is essential for effective communication among people from diverse cultures. Benefit from courses with a special focus on creating global awareness of the particular character of different cultures.

Diversity film series

Enjoy international films in this cooperation with the University of Television and Film Munich. Carefully selected by lecturers from the respective language areas, the films are shown in the original language with subtitles and discussed afterwards.

Global Minds training

Offered in cooperation with TUM Global & Alumni, the events prepare students to apply for positions abroad.

Besides improving your language skills you also get the chance to connect with other students and staff from all over TUM.



STAY WITH US

stay involved!

TUM Global News

Here you can find information about international events, training offers from universities from all over the world, news on cooperative research projects, and more. What's more, you always get the latest news from TUM's representatives in Brussels, Mumbai, Beijing, San Francisco, and São Paulo.



TUM Global Week

Every year, the TUM Global Week offers a platform for the exchange of ideas on internationalization and international experience for the entire TUM family. In addition to numerous information and networking events for students, doctoral candidates, scientists, administrative staff, TUM alums, and TUM's international partners, the Global Week is the occasion for the annual meeting of the TUM liaison officers with the TUM community.



For news on research funding

The monthly TUM ForTe newsletter published by the TUM Office for Research and Innovation provides information on current calls for proposals and funding opportunities at TUM as well as research programs in Germany, Europe, and beyond.



TUM Community Events

We offer career workshops, alumni expert talks, mentoring get-togethers, and much more for the entire TUM community. Come and join us!



TUM Global Events

Learn more about events organized by the TUM Global & Alumni Office together with strategic partners as well as about the events of our liaison officers. Moreover, the TUM G&A invites TUM's international representatives and all interested parties of our university to the virtual information series TUM Global Spotlights – an informal, 30-minute exchange in German about news from TUM's international network.



Our newsletters

TUM Global Opportunities

International exchange, funding programs, partnerships, events and more: TUM students, employees and researchers as well as external interested parties can keep up to date on the latest news via the TUM Global Opportunities newsletter.



TUM.Africa

Keep up to date with what is happening at TUM.Africa: From our TUM-KNUST partnership in Ghana to projects across the African continent.



International Campus Life

Are you an international student at TUM or interested in networking with global peers? Then, sign up for the International Campus Life newsletter to always stay up to date. The newsletter features events organized by International Campus Life and ESN TUMi e.V., as well as further events at TUM and in Munich that are relevant to international students.



Partner Organizations Funding Programs

TUM's international portfolio described in this brochure is kindly supported by

Bavarian State Chancellery

TUM-KNUST Cooperation Center project

Bavarian State Ministry for Science and the Arts (STMWK)

TUM Global Visiting Professor Program

European Union

EuroTeQ

Erasmus+

Excellence Strategy of the Federal Government and the Länder

TUM Global Incentive Fund

TUM Global Visiting Professor Program

TUM's Liaison Offices

KNUST-TUM Partnership for Innovation and Sustainable Development

Flagship partnership with Imperial College London

Maximilian Graf Montgelas Program

TUM Global Postdoc Fellowship

Federal Ministry for Economic Cooperation and Development (BMZ)

TUM SEED Center

German Academic Exchange Service (DAAD)

TUM SEED Center

TUM PREP

Exploration. An Indo-German Partnership Project (IGP)

EuroTeQ

International Campus Life

National Research Foundation Singapore

TUMCREATE





Bavarian State Chancellery







Bavarian State Ministry of Science and the Arts





Imprint

Publisher

Prof. Dr. Thomas F. Hofmann, President of the Technical University of Munich

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Editorial office

TUM Global & Alumni Office

Person responsible according to the German Press Law

Dr. Harald Olk

Design

DIETRABANTEN. Büro für Kommunikationsdesign www.dietrabanten.de

Proofreading

Stephen Starck

Printing

Druckerei Joh. Walch GmbH & Co. KG www.walchdruck.de

Print run

1,000 copies

Pictures

P. 2/3......Alexander Niederklapfer/TUM
P. 4.....Alexander Niederklapfer/TUM
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group in London), /Vladitto (office building),
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(Humboldt), pixabay.com/Pexels (sea),

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