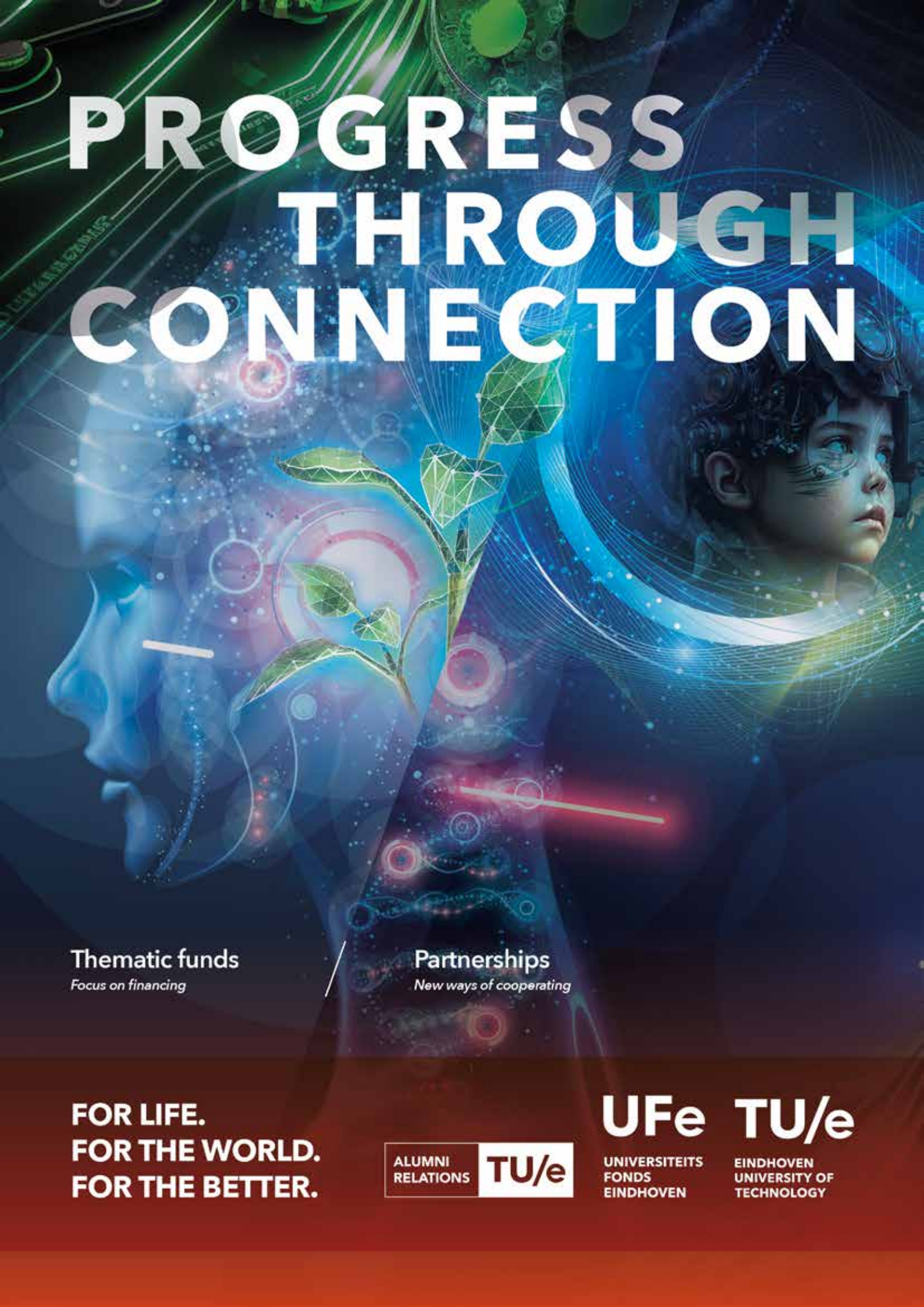
PROGRESS
THROUGH
CONNECTION
Thematic funds
Focus on financing
Partnerships
New ways of cooperating
FOR LIFE.
FOR THE WORLD.
FOR THE BETTER.
ALUMNI RELATIONS TU/e
UFe
UNIVERSITEITS FONDS EINDHOVEN
TU/e
EINDHOVEN UNIVERSITY OF TECHNOLOGY

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The picture on the cover is AI generated with these keywords:
Health, sustainable, talent development, people, futuristic, realistic, without text.

Progress through connection

2023 is the 67th year of our existence. From the start in 1946, cooperation is in our DNA. Today it still is the backbone of our strategy. We are an international top university with strong roots in Brainport Eindhoven. We have a leading position in industrial collaboration that we want to expand further.

Our work and our contributions to society are built on connections. Connections between alumni, between alumni and TU/e and between TU/e and companies and organizations around us.

ASML

A perfect example of the importance and results of connections is our partnership with ASML. It boosts progress for both parties and the resulting collaborations provide enormous opportunities for the university, for scientists and for students. It will also help us attract talented researchers from around the world, which is crucially important for Brainport Eindhoven, The Netherlands and Europe."

The TU/e community

Our history shows numerous technological innovations and contributions to progress, in large part thanks to the students, researchers, alumni and friends joining forces. They demonstrate the power of the TU/e community. As individual engineers and professionals, we stand strong, thanks to our solid education. But it is when we unite, that we become invincible.

The funding and support we get from our many generous donors give us the means to let talent flourish and to pursue extraordinary and innovative ideas. We use what we are given to give back to the world.

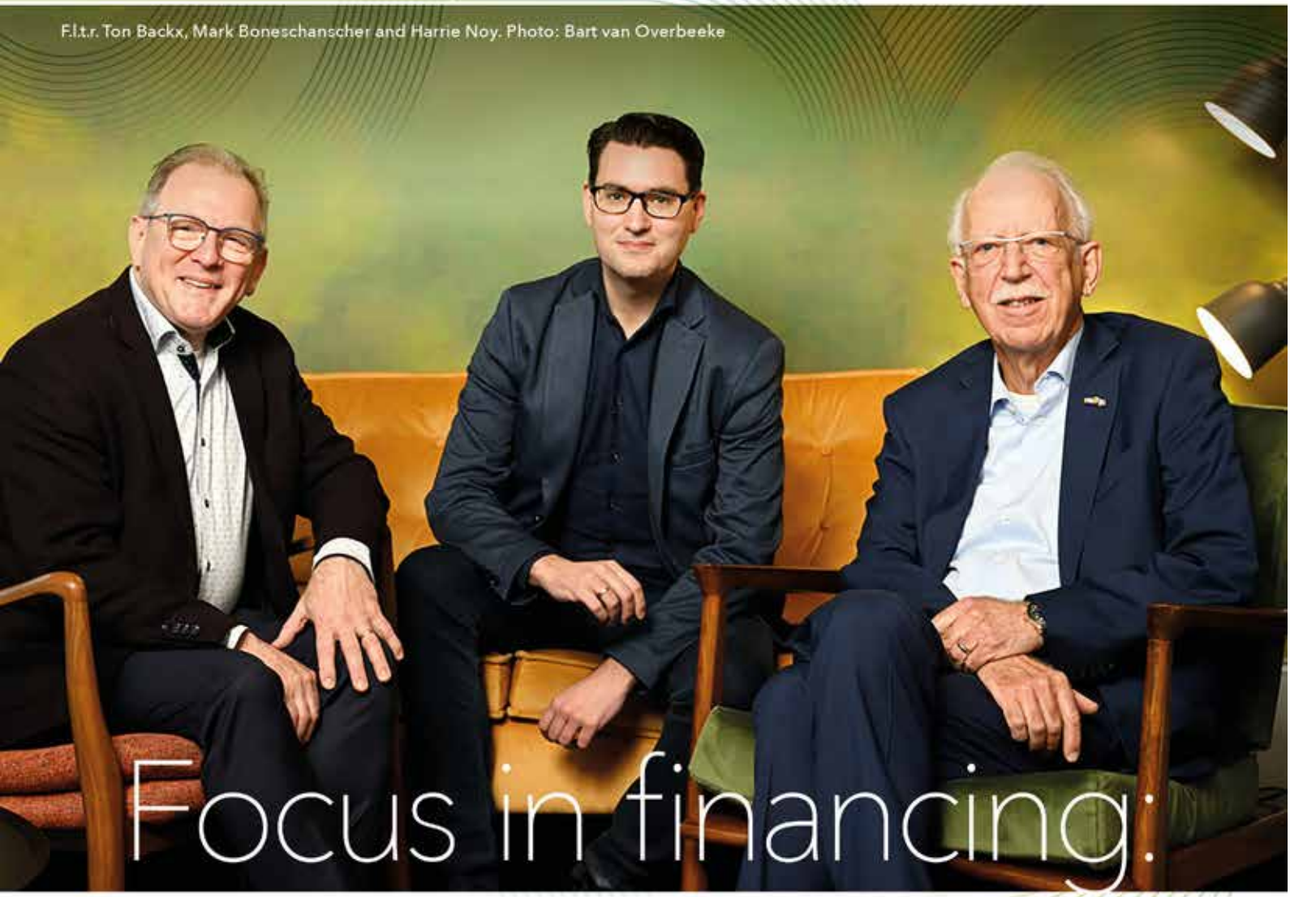
Focus on connections

In the coming years, The Office for Alumni Relations and the University Fund will focus even more on building and cherishing connections. Because they make us stronger. Not just as an individual educational institute, but as a region and as a society.

The more and more fruitful connections we establish, the better we can live up to the motto of The Office for Alumni Relations and the University Fund:

For Life. For The World. For The Better.

Robert-Jan Smits
President of the Executive Board
Eindhoven University of Technology



F.l.t.r. Ton Backx, Mark Boneschanscher and Harrie Noy. Photo: Bart van Overbeeke

Focus in financing: our new thematic funds

Fundamental research is a pillar of university education and progress in many areas that define society. But these projects can cost vast amounts of money and, since the outcome is often uncertain, funding them can be a cause for stress and insecurity for the people involved.

In late 2022, we founded two new funds: The Energy Tech Fund and the Health Tech Fund. The idea behind them is to focus on helping young talent develop their creative ideas for addressing societal challenges. That way, projects chosen by a committee will have access to funding over a longer period, helping everyone involved focus on the task ahead and not worry about continuity.

Based on ambitions

"Within the university, we put a lot of effort into developing talent. And those young people have quite a challenge at the beginning of their careers in the current system to find funding for their own original research ideas," explains Ton Backx, director of the University Fund Eindhoven (UFe).

Ton Backx, director of the University Fund Eindhoven He continues: "On the other hand, we are currently facing enormous challenges within our society, but we are hesitant and sluggish in really getting to grips with those challenges. In any case, this is how it is for the energy transition, where the discussion has been going on for 50 years and we have known for 30 years that we urgently need to start doing things differently. Add to this the fact that many people are living increasingly longer, fortunately, while we as a society are insufficiently prepared for this longevity wave along with the demand for care that goes with it."

The best developments and often the big breakthroughs come from bringing young scientific talents and those big societal challenges together. That creates scope for curiosity and ambition. What could be better than to support those young people using UFe resources. These are contributions from our donors, mostly also alumni of our university, who pursue those same developments? The theme funds were created based on that idea," Backx says enthusiastically.

The funds were established by existing donors, such as Harrie Noy, former CEO of Arcadis, along with Ton Backx, director of the University Fund Eindhoven and the Office for Alumnirelations and experts like Mark Boneschanscher director of EIRES, the Eindhoven Institute for Renewable Energy Systems. These three gentlemen came together to discuss the origin and importance of these new funds.

Ton: "As a society, we are currently facing enormous challenges. Climate change is speeding up and we need to pick up the pace to fight it. And nowadays, people live longer. We are insufficiently prepared for the coming demand for care."

A source of breakthroughs

Fundamental research has always been and will always be a source of breakthroughs. *Ton:* "And that is what we need now. We need room for curiosity and ambition and the resources to make that happen." *Harrie adds:* "I considered setting up a named fund to focus on energy transition research. But that doesn't attract other alumni. With these funds anyone can contribute, so we can provide this generation with some of the benefits I had during my time here."

Radical innovation

Mark is sure the funds will be very useful to generate radical innovations: "Nowadays, science projects in the Netherlands are increasingly subject to rigid roadmaps, prescribed by partnerships between business, government, and science funders. In these times, I find the gifts of our donors truly inspiring."

With these funds, we hope to give young researchers the time, focus and inspiration to come up with – as Ton puts it – wild ideas. Because to take on the challenges of our time, thinking outside the box no longer is a luxury, but a requirement for true change and progress.

"In these times, I find the **gifts of our donors truly inspiring.**"

This is an abstract of a longer article that can be found on **ufe.tue.nl**

F.l.t.r. Donsheng Yong, Lisanne Havinga, Antoni Forner-Cuenca, Thijs de Groot.

TU/e **Energy Tech Fund**

This fund supports research and projects that focus on the consequences of our large-scale use of fossil fuels and reversing them. Such as new forms of energy or accelerating the energy transition.

Green hydrogen to balance the grid

In the future, wind will be a major source of renewable energy. The Netherlands wants to generate between 38 and 72 gigawatts of offshore wind energy by 2050. But our grid can only handle 20 gigawatts and wind does not always blow.

Donsheng Yong, Assistant Professor at Electrical Energy Systems, is working on a 'two birds with one stone' type of solution: green hydrogen, generated from the energy of offshore wind farms. It's easy to store and suitable for generating electricity later of converting into other types of fuel.

Sustainable renovation thanks to *artificial* intelligence

There are many houses built between 1945 and 1990 that have little or no insulation. And if they have, the materials used are outdated or even decayed.

"The results were groundbreaking: only one day's work was needed per house."

Diletta Giuntini and Maja Rücker.

Lisanne Havinga set out to calculate how to make them sustainable and cost-efficient as fast as possible. She devised *De Rekenkern light (The calculation core light)*: software running on a supercomputer that calculated the best sustainable renovation approach. The results were groundbreaking: only one day's work was needed per house. Now she plans to upgrade to a system that can do the same for the rest of the Netherlands.

The much-needed evolution of batteries

Conventional batteries have some major drawbacks: shrinking and expanding reduces their capacity with each charge cycle, they are made of rare materials that pollute our environment and they are not suitable for large-scale storage. In short: batteries need to get better and smarter.

Antoni Forner-Cuenca, Assistant Professor of Chemical Engineering at TU/e, agrees. He is currently working on several electrochemical technologies, including fuel cells, electrolyzers and redox flow batteries.

The electrolyzer of the 21st century

Interest in Hydrogen has grown in recent years. Not just because of the rising gas prices: it can also help reduce our dependency on fossil fuels. To create it, we use electrolyzers; devices that have changed very little in decades because we don't know exactly how they work.

Thijs de Groot, Assistant Professor of Chemical Engineering and Chemistry, is researching alkaline electrolyzers for large-scale production. He wants to make them more efficient, which requires disruptive methods, trial and error and working around paradoxes.

Better materials for better solutions

Diletta Giuntini (Mechanical Engineering) conducts research on ceramic and mixed polymer-based ceramic materials that can improve hydrogen production and storage. Dilletta's work is largely invisible, but of no small importance.

So far, materials she helped assemble are finding their way into several innovations. Such as more efficient and different types of batteries and coatings that minimize friction in turbines.

Underground storage of gasses and substances

Storage of gasses and fluids in underground spaces, such as salt caverns, can store excess amounts of produced fuels, like hydrogen. This sounds simple enough, but each space has different properties, like pressure, temperature, and possible reactions to the stored material.

Maja Rücker (Mechanical Engineering) investigates how different gasses and liquids behave in porous spaces. Her work will help optimize storage options and safety.

Carola van Pul and Beatrijs van der Hout

TU/e **Health** Tech Fund

This fund supports research and projects in the field of health. With technology as the starting point.

Preventing long-term consequences of preterm birth

In the Netherlands, 6.9% of babies were born prematurely (<37 weeks) in 2020. Worldwide, this percentage is 11%. The monitoring and support they need prevent bonding with the mother. Also, their environment is crowded and often too well-lit, sabotaging their sleep rhythms. That takes years to recover from and disrupts weight gain and neural development.

Currently, measuring sleep patterns can only be done in specialized clinical settings. Recent studies found an excellent alternative: measuring movement. **Carola van Pul** is a professor in Clinical Physics. She is working on a fiberglass mat that accurately records movements and relays the results to medical professionals. Initial test results are promising, but more research is needed to make it suitable for home use.

Cardiac monitoring of newborns prevents thousands of deaths

Thousands of babies die shortly after birth in the Netherlands alone. More than half of these deaths could be prevented if we could apply 24-hour heart monitoring. But the current (Doppler) technique can cause thermal damage to the child and requires a lot of clinical experience.

Beatrijs van der Hout is working on electrophysiological monitoring. Artificial intelligence, existing databases, and advanced models of the fetal heart help to interpret the results. The child can be monitored at home, and first- and second-line caregivers can access the record remotely. This also relieves the burden on hospitals and reduces healthcare costs. Beatrijs wants to test and refine this method in a pilot study.

Women in Engineering

Let's hear your dreams!

Marina van Damme Grant Winners 2022

The Marina van Damme Grant is awarded exclusively to female engineers who have completed a Master's, EngD or PhD program at one of the four technical universities in the Netherlands. At the TU/e, in 2022, the honor of winning befell Brigitte Lammers. Chenyue Zhang was the runner up.

Both winners are alumnae of the Chemical Engineering & Chemistry department. And both have a powerful message for female engineers in what still is predominantly a men's world: "Let's dispense with the modesty. Be open about your ambitions and learn to articulate what you want."

Role models

Winning an award like this puts one in a perfect position to be an example for other women and to advocate for more attention to the ambitions of female engineers. And that is exactly what Brigitte and Chenyue aim to be. Brigitte wanted to connect to the industry for her graduate internship. But soon, she noticed her insecurity about her role within the business world. In hindsight, during her master's, she missed a female role model. Now that she is one herself, she talks to mostly female audiences about women in science and business. Brigitte: "And since I do so, I find out that more women feel insecure as well."

"Let's dispense with the modesty. **Be open about your ambitions and learn to articulate what you want."**

Now, she encourages them to talk to each other, exchange experiences and dreams and speak up. She brings up a classic misunderstanding about women wanting a career: "No man is ever questioned about how difficult it is combining a career and a private life. We still have to justify ourselves. Even in 2022."

Keeping in touch

Brigitte already has a strong career and will spend her grant on a professional leadership course. And Chenyue will use it to find better ways to connect to the industry. They both keep their ties with their old department close, educating female students about their career options and encourages them to dream. Brigitte and Chenyue are convinced, women can make a company stronger when they become themselves: "Men sometimes lack a little empathy. We can be both sensitive and resolute leaders. The best of both worlds."

The Award & The University Fund

The Marina van Damme Grant and the University Fund share a common goal: helping scientific talent grow. The fund supports the winners in managing and spending their grant wisely, so they can focus on their work and/or projects.

Beatrix Bos

Keyword Energy

In her own words, Beatrix Bos is a project manager and impact creator. The latter we can confirm from experience, after she hosted one of our events. She is a TU/e Alumna, a former Sustainable Innovation student with a master in Sustainable Energy Technology and a true energy transition evangelist. If we could harvest her energy when she talks about the subject, we could probably do with one or two less windmill parks. We also view her as a role model to women in science, tech and/or engineering.

Alpha vs Beta

Beatrix loves to moderate and present events that deal with energy in all its facets. She has a talent for explaining complicated subjects to just about any audience and a way of presenting that keeps people interested. "It's a combination of things I learned, like presenting, and the things I love, like my area of expertise.", she explains. "Until not so long ago, I was unsure about how much I would like to work with scientific and engineering subjects. But I found out it really is right up my alley. That really fueled my passion for doing what I'm doing now."

That realization is one of the reasons she advises young women to take up engineering-related studies, even when people around them think they shouldn't: "The notion that women are more suited for alpha than beta studies, is nonsense. I encourage anyone who is interested in energy or other aspects of engineering to just go and discover what you love. Be bold and just do it. Like in that quote that is so often wrongly attributed to Pipe Longstocking: 'I have never tried that before, so I think I should definitely be able to do that."

Obstacles and engines

Though the playing field is becoming more and more leveled in favor of women, some subtle obstacles for women with technical ambitions persist. One example is about 'presumed knowledge'. Beatrix: "When we were taught about the processes within combustion engines, I had trouble keeping up. I hesitated to ask for additional explanation, because it was clear that the male students all knew how these engines work. And they made up the majority in the classroom. Now I know I should just speak up when I don't understand something. Usually, I turn out not to be the only one who's in the dark."

"It's a combination of things I learned, like presenting, **and the things I love**, like my area of expertise."

ChatGPT

Beatrix understands how the whole cloud of subjects behind the energy transition can make it feel too complicated for many people. That's why she uses as much practical examples as possible to minimize the perceived distance between her audiences and the subject at hand. Beatrix: "Take, for instance artificial intelligence. A year ago, explaining that to someone not academically educated was a real challenge. Now there's ChatGPT. Most people have heard about it and a lot of people have tried it. They now have a better understanding of what AI can be and do.

Thinking in systems

"The same goes for renewable energy", she continues, "At the turn of the century, very few people knew how we could harvest renewable energy. Nowadays, there's not a street without solar panels. Now we need to shift our focus from looking at individual tools and means towards the energy system as whole." Just like the EIRES institute she also worked for, she likes to look at the big picture, where multiple types of energy complement each other.

A bright future

Beatrix: "Every part of the energy transition feels like a compartment right now, but integration is coming. There's a lot of great products and concepts being developed by companies and by scientists. Which is a good thing, because we can't really look at our government for solid long-term plans for the much-needed energy transition."

Her vision for the future is bright: "I would love to look 10 to 15 years ahead, or fast forward to 2050, to see how we are doing. I'm optimistic about it. I put my trust in science. I know from experience what difference it can make."

Role models

Alumnae that lead by example

For students and alumnae having a role model can be a source of inspiration. Their stories can help future generations of women in science prepare for life in what is still mainly a man's world. In this article, we present and honor some of the women that lead by example.

WOMEN IN ENGINEERING

Manuella Wilts

Senior Director of Operations & Board Member of Janssen Pharmaceutical Companies. She studied Industrial Engineering at TU/e.

In March of 2022, Manuella announced on LinkedIn that she would be changing her first name to "Peter". She did so to make a point about underrepresentation of women in positions of power. Her trigger to do so was the fact that there are more CEO's named Peter than there are women CEO's in the Netherlands.

The massive number of reactions to this action strengthened her drive to pave the way for other women. "That is my responsibility, and not just as a mother of three daughters.", she says, "Me and my husband tell them to keep their horizons as broad as possible, to make their own choices and follow their own star." Manuella also helps other young women to stand up for themselves. She is an active member of the RoundTable Network for women in leadership.

Aukje Doornbos

Managing Director of Covestro Netherlands, a German chemical company. She studied Chemical Engineering & Chemistry at TU/e.

No matter how focused on gender equality your (future) employer is, there will always be topics you can't discuss with your male colleagues. Aukje was glad she could go to the women in higher positions when she joined DSM in 2004. "They were happy to help me. But also, hesitant to discuss subjects like combining children and work openly, fearing it might harm their career. I, on the other hand, am in favor of discussing it normally, even if it's only to show it *can* be done."

According to her, role models don't have to be miles ahead of you: "One step is enough for them to have the experience that benefits you. And if you can: find a sponsor. Someone to help you, someone that understands you." She also has some advice on the prejudices that you will encounter: "Take a deep breath and answer with humor. Don't let it get to you. Most of the time it's not a deliberate attempt to dismiss you."

"Take a deep breath and answer with humor."

Sandra Heuts

Managing partner of Risk Advisory at Deloitte. She studied Mechanical Engineering at TU/e.

Becoming a role model is not something you strive for. At a certain point you just are one. "Once you realize that, you can actively take on that role", according to Sandra. She did not have a role model herself, but a "fantastic boss who let me do things my way."

That boosted her self-confidence tremendously. Now she is happy to support other women in her organization, by listening, by giving advice and by actively supporting her protégés. She calls them regularly to nudge them in the right direction: "I'm part of an informal network and I'm glad I can bring something to it. Not just by giving advice, but also in helping other women find their passion."

"We need to become a group and help each other. Strong connections need time."

Ellis ten Dam

Commercial director of Buildings at Royal Haskoning DHV. She studied Real Estate Management at TU/e.

Ellis is an advocate for a direct approach in finding a sponsor: "They don't just fall into your lap. Be bold, put yourself out there, find someone that is connected to what fires you up. Let you passion show, and you will get noticed."

Just like Aukje, she makes herself available for female students: "By sparring one on one, or on a platform that matches demand and supply. I'm always curious to find out what students need to get ahead."

She is convinced that the real power of connection lies in scale: "We need to become a group and help each other. Strong connections need time. You are not going to share much with someone you just met. That's why we need to create our own platform."

Want to get in touch with Beatrix, Manuella, Aukje, Sandra and/or Ellis?
E-mail us at alumni@tue.nl and we'll provide a connection. And please visit our alumni platform to stay informed and connect with many more alumni.

Lightyear One: take two

We are a University Fund that helps finance scientific projects that are, for the larger part, based on fundamental research. That is why we know and understand that success is not guaranteed. The reality is that a considerable number of projects fail, and many ideas turn out not to be viable. But as an organization that strives to support the development of talent, we look beyond the black and white of success and failure. We like to think in opportunities to learn and grow. And we put our trust in connection as a catalyst to make the impossible possible. We believe that cooperation, coaching and mutual support boost progress. Or, in this case, give a promising product a second chance at proving it's potential.

"Told you so!"

When the news broke that the company behind Lightyear One was facing bankruptcy, there was much disappointment and frustration. Especially for those who had put so much effort and countless hours of their lives into making this revolutionary car a reality. Tessie Hartjes, Lightyears VP of marketing is one of those people. To her Lightyear was a goal she invested in with time, expertise and passion. And she hasn't lost a bit of her drive and enthusiasm. Even while the press was still reporting about every single detail of the debacle, she and her colleagues were already gearing up to give the Lightyear One a second chance.

Fortunately, Tessie and the others can count on the support of people who came to their aid to continue this promising enterprise. People that have a history of successful business ventures and a much better understanding of the science behind this revolutionary car than the so-called experts that were quick to shout out: "Told you so!". One of those people is Harry Otten, former CEO and founder of Meteo Consult, TU/e alumnus, serial entrepreneur, and supporter of many causes he strongly believes in. Together with Tessie and Harry, we look back at what happened and, more importantly, what the future will look like.

A wild ride

'The best helmsmen stand on shore' is a popular expression in the Netherlands. It means that the watchers always know better than the doers. Just walk into any bar during a major football match to find out that The Netherlands is populated by 17 million coaches and experts. Tessie got a taste of it when she saw her dream crumble: "There were 2 types of reactions. The first one indeed was 'told you so', the second was more along the lines of 'Don't let it get to you. This builds character and helps you learn.' I like the second much better because that's also my way of looking at what we did and will be doing. To paraphrase Edison: we discovered a way that didn't work. Now we can go on to find the one that does."

Tessie fondly remembers every moment she spent at Lightyear so far, starting with the first time they took the car for a real ride: 9 hours non-stop: "We worked hard, but just before the test, the engine needed some work. But we made it, and that first ride is a memory I will cherish forever."

"Lightyear is a great concept. **It deserves to become a success"**

A concept that deserves to be successful

She still believes firmly in Lightyear: "Its proposition gets more relevant every day. We need cheaper and more sustainable energy. Besides that, this car is unique in its design and materials. And the number of pre-orders prove there's a demand for it.".

Harry agrees: "Lightyear is a great concept. It deserves to become a success. I was quite surprised when I learned that things were going wrong. I really felt sorry for them. Tessie and I met when the TU/e Magazine Cursor interviewed us together: the upcoming talent and the experienced entrepreneur. We got along great. I loved the Lightyear concept and became an investor."

Autonomous driving ambitions

"Maybe the good people at Lightyear were a bit too ambitious.", Harry speculates on what went wrong, "In my opinion, they should have kept a strict focus on producing a car with the core Lightyear feature: solar charging. But they also tried their hand at 'extra's' like autonomous driving. If Elon Musk and Mercedes can't get that to work after years of trying, maybe you should leave it alone as well. Having said that, I still see a bright future for a tightly managed and focused organization. They have learned a few valuable lessons. That's why I invested more."

The Dutch investment climate

His way of thinking and subsequent investing may come across as counterintuitive, especially when you consider how sober we Dutch as a people usually are. We tend to discourage standing out from the crowd and to avoid risks. Hardly a combination that creates a welcoming climate for entrepreneurship, especially when the ambition is to build a brand-new type of car. This nature reflects in the investment climate.

As Harry puts it: "The Dutch investment climate is a tough one. It feels like we rather see people fail than to root for them. We invest in the wrong projects and we lack the courage to try new things, like the Americans do. When someone fails over there, they see it as a lesson learned and get back in the saddle to try again. That's why they come up with more new and successful concepts than we do. Success doesn't come for free."

Tessie Hartjes

Harry Otten

Time to market

As a University Fund raising funds for fundamental research, we know the risk of failure feels much greater compared to investments in developments that have a shorter time to market. But we're also convinced that these 'riskier' investments create a much bigger yield. Maybe not directly in terms of financial gains, but our world and society absolutely benefit from them.

Tessie elaborates on the investment issue: "That caution is not just a Dutch, but a European trait. It feels like everybody wants to take big steps towards progress, but no one is willing to accept the inherent risks. We really had to fight to get funding the first time, even from the Dutch Government, where they talk about big plans and innovation all the time."

New beginnings

She emphasizes that she doesn't say this out of spite or bitterness. This is her passion for Lightyear as a concept speaking. She also shares a personal insight she gained during this episode of the company's history: "The weird thing is that going bankrupt was always my biggest nightmare. But now that we have looked down that cliff, it feels more like a new beginning. One that is more focused on putting Lightyears on the road."

> "Just like Ton, I advise them to **think big.**"

Harry advises the people behind Lightyear to do exactly that: set a mission. "Act on your drive. When you're good at something and answer a demand, success will follow. I hope new partnerships will form, preferably with some kind of support of the Dutch government."

It takes a network to build a car

Tessie and her colleagues at Lightyear received a lot of support over the last few years and in the recent, difficult months. There were a lot of people offering all kinds of help and services. But however generous and kind much of these offers are, things like trainings and services are not what the team is looking for at this moment. Tessie: "It's hard to turn down any kind of help, but right now we are mainly looking for financing. We would really benefit from a strong network that keeps growing. So, introductions to potentials suppliers, clients or investors would really be welcome."
We've had some great people standing by us in our journey, like Ton Backx. He always helped us to think big. He encouraged us to not just take part in the Solar Challenge, but to set your aim for the #1 position and give it all you've got. It's people like him and his vast network that will help us succeed."

Harry is content with being an investor rather than an active consultant for the next phase for Lightyear One: "Just like Ton, I advise them to think big. Building and selling a car is quite ambitious, but why not? And if all else fails, a lot of technology can be sold or patented, like the knowhow on the solar panels."

The future

The painful truth is that we won't see the Lightyear 0 on our roads. On the other hand: the bankruptcy and subsequent restart have made the company more interesting for investors. Tessie realizes that feels cynical. But her belief in Lightyear as a concept and her drive to make it a success leave no room for melancholy and bitter aftertastes: "It's time to move on. We have a much clearer picture of what we need to do to get where we want to be. We made sure we bought important parts of our inventory ourselves and the optimism in our team is touching. We still see opportunities everywhere and we can't wait to get started and show the world what a great concept Lightyear still is."

Let's get to work!

This is exactly how Harry feels about it: "Learn from your mistakes, make the right connections with people that can help you and benefit from the experience of people who have been where you are now. But the most important thing to do right now is to roll up those sleeves and get to work."

New ways of **cooperating**

When you study TU/e's history, there is one characteristic that stands out. And that's cooperation, especially with companies. In our 67 years of existence, we have always had mutually beneficial partnerships with Philips, our founding father, and other companies. Together we bring our inventions, our research, and our visions for progress to life.

Different perspectives on the same goal

As a university in the middle of a region that's focused on innovation like no other, we have had the privilege of working with numerous companies and institutes. They have helped us advance our projects and ideas and look at development from different perspectives.

ASML

A perfect example of successful cooperation is the partnership between ASML and TU/e. In April of 2023 both parties signed a memorandum in which the university and the world's largest supplier of photolithography machines agree to jointly develop a 10-year strategic research roadmap. ASML will also build a new research facility on the TU/e campus, including setting up a state-of-the-art clean room. Robert Jan Smits: "With the signing of this memorandum, TU/e and ASML seal their good cooperation of the past years and take it one step further. This facility will be a place where joint research is also emphatically carried out. Good for our researchers, but certainly also for our students, who thus already meet ASML researchers during their studies, from whom they can learn a lot."

New Partnerships

As the Office for Alumni relations, we see the fruits of working with partners like ASML almost every day. We understand the importance of maintaining existing and creating new connections. That's why we are always looking for parties that share our values and that want to take part in partnerships in which we both benefit. One of those parties is Neways.

Cooperating with Neways

Neways is a company that develops and produces electronics that facilitate major trends around global ESG themes. They do so for the most demanding customers in the industry. Their products help create a sustainable future. Neways was founded by TU/e alumni and many of our alumni currently work there or have worked there at some point in their career.

Like many other companies, they need highly educated engineers to do what they do and to keep growing. At the same time, they have a lot to offer our students and alumni: unique knowledge and insights being just two examples. The same can be said for other companies, but our belief that this partnership will be a success is based on the values we share.

Shared Values

The two most important shared values are our commitment to help find answers to todays and tomorrows challenges and the conviction that connection and cooperation dramatically increases our chances of success in doing so.

That's why, in the coming months, we will work out the details of our cooperation, focusing on the exchange of information and support that will benefit all parties and help us achieve our mutual goals. We look forward to a long-lasting partnership.

More information on Neways can be found in their website: newayselectronics.com

What multiplies when you share it?

The answer is: knowledge

When our students become alumni and pursue their careers, they gain experience and keep learning. That knowledge is extremely valuable for the TU/e. Learning from alumni helps us keep up with the evolution of domains in which we educate our students.

Perseverance

Experiences and learnings from more experienced alumni are also of great value for students and new alumni. On several levels. When experienced alumni share what they learned, they help others to reach their goals more efficiently. And that goes beyond tips & tricks. A lot of alumni that were kind enough to share their stories and knowledge also address issues like challenges and frustrations. They inspire their audiences with stories about overcoming obstacles and perseverance.

Events

To give these alumni and their stories the stage they deserve, the Office for Alumni Relations organizes several types of events. The two most important are the Innovation Night, in which alumni can coach student teams who present their products and/or ideas, and StartUp Night, where alumni share their experiences with other alumni in starting up their own company.

"The Eindhoven region is a particularly fertile environment for the emergence of tech start-ups, alumni play an important role in coaching those start-ups. **Therefore the cooperation with the Office for Alumni Relations is very valuable."** Jeroen van Woerden, Managing Director The Gate

"Alumni are of valuable importance to the TU/e student teams, as coach they can pass on their expertise through the GURU Network within TU/e innovation Space." Bart Koppelmans, TU/e innovation Space

Networking

Before and after these events, there's ample time to meet other visitors and do some networking. Many mutually beneficial relationships came to be during these events. From business finding the talent they needed to representatives of businesses that laid the foundations for future cooperative endeavors.

Coaching

These events offer what you could call 'entry level coaching'. The audience learns valuable information about what works and what doesn't. But there's more hands-on help, thanks to several very involved and experienced alumni. They help others get ahead faster and navigate areas that are - currently - outside their area of expertise.

The TU/e innovation space

At TU/e you will find many people and teams that embrace and encourage innovation. But there's one place that facilitates connection and innovation like no other. And that's our TU/e Innovation Space.

This is our expertise center for Challenge-Based Learning (CBL) and entrepreneurship. It is all about connecting and cooperation. It's an open community where students, researchers, businesses, and other organizations exchange knowledge and devise responsible solutions to the world's complex challenges together.

The Gate

Our partner in organizing events such as the StartUp Night. The Gate is the platform that supports startups in the first phases of their existence. The people behind this initiative provide information, counseling and – as they themselves call it – everything startups need for a flying start. They provide training made to measure for the first three phases of starting a business: orientation, validation, and commitment. They also help new business owners in one of the most important domains when it comes to building a company on and idea: intellectual property.

"I would like to be involved with startups related to sport and technology. **I can offer coaching and help them find the right network that will act as a springboard."** Kjille Hoeben, CEO of start-up Purplexus BV

OUTSIDE THE BOX

Thinking outside the box

In fundamental research it's often wild ideas that turn into breakthroughs. That's why, at TU/e, we encourage leaving the beaten track. Which often leads to unique and successful results. These are the stories of 3 entrepreneurs who created their own opportunities by looking at their business from a different perspective.

Thomas Plantenga

CEO of Vinted and
TU/e Biomedical Engineering alumnus

Manufacturing clothing takes a heavy toll on our environment. It uses massive amounts of water, chemical processes, polluting packaging and relies heavily on conventional means of transport.

Thomas is highly invested in sustainability. With his degree, he could have helped tackle these issues on a more basic level. Instead, he looked for ways to prolong the lifecycle of existing clothing to keep it from being disposed and pollute our environment. For the second time. That's how he became CEO of Vinted, Europe's de facto online marketplace for secondhand clothing. Vinted makes it easy for anyone to sell their items and prolong their life cycle.

Henk Arntz

CEO of Suncom Energy and
Mechanical Engineering alumnus

Sometimes, the simplest ideas work best. One of the ideas behind his successful startup, has to do with starting a fire with a magnifying glass. That works because the smaller the focal point is, the greater the heat will become.

He applied that principle to the existing concept of mirrors that capture and concentrate sunlight. He focused on improvements like using square surfaces, rather than circular ones, thus increasing the concentration of sunlight by 50%. Instead of taking up areas of 7x100 meters, Suncom's mirrors fit into a container and are about 50% cheaper than classic versions. These and other specs make them a viable and sustainable alternative for industrial heating.

Wouter Twisk

CEO and founder of JouwWeb and Webador and
TU/e Computer Science and Engineering alumnus

When demand outweighs supply, entrepreneurs become creative. During his study at TU/e, he and his fellow student and friend Roel van Duijnhoven were frequently asked to help build websites. When they didn't have time, they wanted to help people build their own websites. But there weren't any tools that were user friendly enough for consumers to use.

So, in 2006 they started building their own. Now they have around 70,000 customers using their products and ambitious goals to heavily increase that number. Wouters advice: If you have an idea, try it out. Don't try to perfect it first. Start small and learn and enhance it as you go.

What connects **men and machine?**

Communication between people and computers has always been indirect. They carried out the instructions we gave them using languages that could not be more different than ours.

Talk & Respond

But that communication barrier between man and machine is fading. Voice assistants help us control our homes using spoken commands and to use our phones while we drive our cars. But these interactions are heavily based on pre-defined commands and descriptions. They're turn-based monologues rather than dialogues.

Let's have a chat

Nowadays, AI-services allow us to interact with computers in a way that feels most natural to most people: by typing and talking. Language, which was once a barrier, now helps establish a connection that feels almost like there's a real person at the other side of the screen. ChatGPT, for example, understands human traits like sarcasm and humor. It can carry on a dialogue and finetune results by incorporating additional information.

Design by prompts

AI is also creeping into a domain that is still perceived to be exclusive to humans: creativity. But is it real creativity? Is the outcome something original or a mere remix of visual conventions and standard depictions of the words we feed these services?

You decide

We asked Midjourney, one of the first AI design services, to create images using several of the values the University Fund and the Office for Alumni Relations and University Fund. Instructing AI services is done by using prompts: telegram-style collections of words that describe what you are looking for.

For the image of the globe, this was the input:

World, society, sustainable, talent development, health, futuristic, realistic, red, blue, green

CONNECTION IN PRACTICE

Alumni Associations

Alumni stay in touch with each other and their departments through Alumni Associations. Thriving communities that organize events and send out updates, such as newsletters, to their members regularly. We are proud to call them our partners in connection and we would like to introduce them to you.

Willem Einthoven

Biomedical Engineering

Named after Dutch scientist and Nobel Prize winner Willem Einthoven. This is an association for graduates of the department of Biomedical Engineering. Together with their department and study association Protagoras, they organize Start-up and networking events, Career development events, Alumni dinners and drinks and other gatherings.
https://www.tue.nl/en/our-university/community/willem-einthoven

IDEa

Industrial Design

Their goal is to contribute to a distinct profile of Industrial Designers educated in Eindhoven. They bring alumni together and promote the exchange of expertise and experiences.
https://www.idea-association.nl/

Alumnia

Industrial Engineering and Innovation Sciences

Alumnia is one of two associations of this department and for graduates of Industrial Engineering. Their target audience consist of business engineers. They organize multiple events that help peers, specialists in various fields, current students, and other business engineers to get and stay connected. Alumnia's core values are networking, conviviality, knowledge and giving back.
https://www.alumnia.nl/

ITEM

Industrial Engineering and Innovation Sciences

The second association for this department focusses on the study programs that are oriented towards technology, science, and psychology. They help alumni stay in contact, both on a social and professional level, by organizing lectures, excursions, reunions, drinks and parties. https://itema.nl/

De Eerste Graad

Eindhoven School of Education

This is the association for those who have received their teaching degree or doctoral degree at the TU/e expertise center. They help maintain relationships with fellow teachers and facilitate professional growth by keeping them updated on developments and providing insights on education.
https://www.tue.nl/en/our-university/departments/eindhoven-school-of-education/education/alumni-association-de-eerste-graad

VSI/e

Chemical Engineering and Chemistry

The association of chemical engineers promotes networking between engineers educated in Eindhoven and connects graduates to the TU/e and its chemical faculty. Members are kept up to date during reunions, lectors and annual member meetings.
https://www.vsi-eindhoven.nl/

Veni

Applied Physics

VENI aims to strengthen the ties between its members and between the members and the university. Along with promoting its members' interests. VENI organizes - amongst others - excursions, lectures, and barbecues. They also co-publish the quarterly Magazine N! that offers scientific articles, stories about experiences and news about the TU/e and the faculty.
https://www.veni.nl/

Ada

Mathematics and Computer Science

The association for this faculty is named after Ada Lovelace; a 19th century female mathematician, and the first computer scientist. Ada organizes events such as drinks, X-mas parties, and reunions.
https://ada-alumni.nl/

BEAN

Built Environment

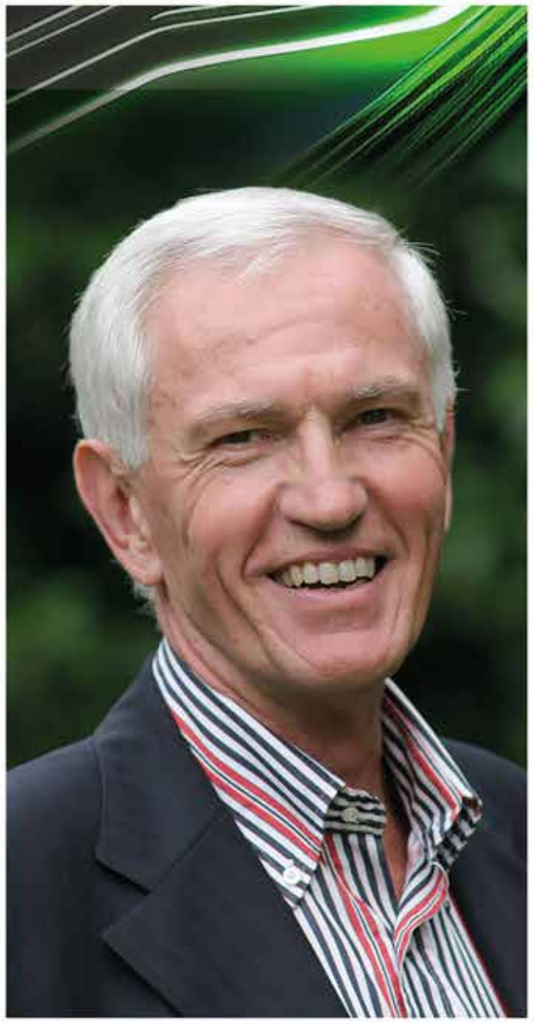
Their name stands for Built Environment Alumni Network and their goal is to improve the connection between alumni, alumni and students, and alumni and the department. Their three values are: Connecting - by facilitating mutual contact, Broadening - by organizing interesting events and Networking - by organizing informal events.
https://www.cheops.cc/career/alumni-network/

More information on all associations, their goals and their activities can be found on the TU/e Alumni Community site:
https://www.tue.nl/alumni

The importance of **sharing luck**

During his career Martin Schuurmans led several institutions that helped propel innovation. He was the head of solid-state research at Philips Laboratories, a professor of Solid-State Physics, the chairman of the NatLab Philips, the Vice-Chairman of Philips Research worldwide. As a member of the board of Philips Medical he helped Philips grow into what it is today.

Behind his impressive list of functions and achievements lies the story of a man who considers himself to be very lucky and insists on sharing that luck with up-and-coming scientific talents. It's a story that gained a new chapter when he became our **latest University Fund donor.**



Doing what feels good

Martin: "There were a few moments in my career in which I decided to go and do something different. They led me to exciting opportunities, such as founding EIT, the European Institute of Technology and Innovation, which nowadays is a top EU source of entrepreneurship and start-ups. But in 2005, inspired by my wife who has always been invaluable to my career, I started doing what I loved most: helping talents reach their potential. We set up a school for biomedical science in China and found someone to manage it. But at the last moment we had to go and do it ourselves."

The 20-year-secret surprise

Martin still has fond memories of that time: "We helped men and women from rural areas who weren't accepted to existing universities to tap into their potential. We took in students who, for the first time in their lives, had a decent place to sleep or even a shower." Enterprises like these are what Martin calls "Important for society and fun to do."

He modestly attributes a large part of his success to luck, and he shares an important discovery to illustrate why he does so: "When I was young, there was no money for my university education. But I got one anyway, only to find out no less than 20 years later that it was the director of my secondary school who paid for it all. I want to give young talents access to that type of 'luck' and some of the opportunities I had in my life."

Funding medical research

In 2022 the University Fund started two thematic funds: The Energy Tech Fund and The Health Tech Fund. Martin and his wife donated a substantial amount to the latter. Their motivation lies in his past, working on Philips' medical innovation, and in personal experiences: "If my father could have had access to medical care as we have it now, he would not have died so young. So many afflictions that used to be fatal are not anymore. To me that is a tangible result of progress. Especially for developing countries, decent medical care is very important. Without it, other types of progress will be very slow indeed."

The changing role of fundamental research

The importance of fundamental research is something Martin emphasizes strongly and often. When he graduated, it was more embedded in businesses than it is now: "Nowadays, international companies have often seriously reduced their own research efforts. They chose to work with universities more. They also scout relevant start-ups and buy the essential ones to serve their business goals." But even though the Netherlands rank 5th on the European Innovation Scoreboard (EIS) 2022, Martin always sees room for improvement: "It's not just Europe we have to look at. The market is and will remain global and we need to keep up with the rest of the world and especially with China. I hope my modest contribution to the University Fund will help young scientists and future entrepreneurs to develop their talents and let them play a part on that global stage."

> **"I want to give young talents access** to that type of 'luck' and some of the opportunities I had in my life"

Support when and where it counts

The University Fund Eindhoven helps make fundamental research possible. But that's not all we do. We also support small, but impactful projects. And a part of our funds is reserved for students and even colleagues that are faced with extraordinary circumstances, such as natural disasters or, as was the case in 2022: war.

The Ukraine invasion

The conflict in Ukraine not only caused emotional issues, but also affected more practical parts of life for students and colleagues from this region. Access to their funds was limited or - temporarily - impossible, making it impossible to pay for basic things like rent or groceries. For some students it posed a threat to their academic career.

To help them, the Eindhoven University Fund set up a separate fund. €100.000,- was put up by the University and the fund. A campaign was quickly organized to encourage alumni to donate, which resulted in an addition of appr. €20.000,- to this emergency fund. We were able to help quite a few of our students and colleagues to get through the first few months of the conflict.

Funding for departmental projects

Made possible by you

In 2021, TU/e celebrated its 65th anniversary and we launched the "Heroes for Heroes" campaign. We asked the heroes of the past and today to donate to offer the heroes of the future the same development opportunities they had back then.

The reactions and donations were heartwarming. With your contributions we were able to do something special in 2022: Each faculty received €30.000,- to set up a project around talent development.

This is a brief overview of the projects they started:

Applied Physics
Professional training in strengthening soft skills for selected undergraduate and graduate students.

Biomedical Engineering
Their Post Covid Fund is going to encourage students to do internships abroad. And supports them financially when they go to do so.

Built Environment
Launch a program in which 7 university professors, along with outside experts, will mentor research talents.

Chemical Engineering & Chemistry
Builds a setup for experimental research in the context of energy transition available to undergraduate and graduate students from all TU/e programs.

Electrical Engineering
Organizes a symposium on the-developments within Electrical Engineering in the Brainport region and at TU/e. The goal: involve Dutch and international technical universities and stimulate networking between (international) students.

Industrial Design
Organizes a conference for students, alumni and interested parties from other educational institutions. The goal: mutual exchange of knowledge about design in the context of social changes.

Industrial Engineering and Innovation Sciences
Develops three initiatives. A training that allows students to gain valuable business skills, a program with sustainability challenges and an initiative around technology that can help people with dementia.

Mathematics & Computer Science
Will enable and support international travel for master's students, doctoral students, postdocs and "early career" university lecturers.

Mechanical Engineering
Distributes the amount among four projects and makes a portion available for a €5.000,- scholarship for upcoming excellent master's students.

Talent Development Projects

The University Fund stands for 'For Life. For the World. For the Better'. The last part of our motto 'For the Better', stands for everything we do to support talent development. On this page, we present an overview of several smaller student projects that helped do just that.

Legs for Lombok - update
Globally only 5 to 15% of amputees have access to proper medical care. The situation in the Global South is by far the worst. This project aims to provide hospitals in those countries with the means to 3D print prosthetics themselves. The printer prototype was developed in Eindhoven and in 2022 Project leader Eric Vernooij tested it in Lombok, Indonesia. He faced issues from higher ambient temperature and humidity disrupting the printing process to problems with getting electronic parts through customs. Their learnings will help them improve on their designs.

Chasing renewable energy
While we in the west talk about wind and solar energy, there are still parts of the world that don't have access to electricity at all. To know how to provide these areas with renewable energy, you need to know what's preventing them from access now. Innovation Sciences student Mario Esteban has found a very original and educational way to find out: with the help of professors, alumni, local NGOs, and the local population, he plans to create a documentary. This project will bundle all his learnings and make them available in areas where people can act on them.

Team Polar expedition
Team Polar is a TU/e student team building a sustainable, autonomous, and affordable research vehicle for Antarctica. In January 2023 they tested their first prototype, lovingly called the Ice Cube, in Norway. And it passed with flying colors. Their skid steering method proved effective, the range was further than expected and the cold barely impacted the battery capacity. There was only one minor issue with the clearance of the wheels, which can be easily resolved. On the way back, three members visited several universities and institutes to spread the word on their development and to be inspired by other universities' programs for student learning.

INTERVIEW WITH TEAM

Progress through connection

Let's stay connected

We firmly believe that connection is the basis for progress. As individual engineers, scientists, and professionals, we are strong. But together, we are invincible. That's why we support and organize all kinds of initiatives and events that help alumni connect with each other and with the TU/e.

We help students and alumni find coaches to help them overcome their challenges and benefit from the experience of more senior alumni.

We organize networking events, like the TU/e StartUp Night and TU/e Innovation Night, where alumni and students learn from each other and get a glimpse of what their future could hold for them. And, of course, these events are great opportunities to network for every visitor.

We encourage and facilitate cooperation. Between alumni and alumni, between companies and alumni and more. We have partnered with several organizations within the TU/e to make teamwork happen, such as The Gate and TU/e Innovation Space.

Got an idea? Let's make it work!

If you have an idea that could use the help and/or insights of other bright minds or if you seek cooperation with others; please reach out to us. We're here to help you turn your dreams into reality.

You can reach us at **alumni@tue.nl.**

Or reach out to us via:
LinkedIn: www.linkedin.com/company/tuealumni/
Instagram: www.instagram.com/tuealumni/
Facebook: fb.me/TUe.Alumni
YouTube: youtube.com/playlist?list=PLgF-H4e_2r1xdcCqran9MMl3ebqI5rTlE3

And you can connect with other alumni though our Alumni Portal: **www.alumnicommunity.tue.nl**

Help support fundamental research

The TU/e University Fund supports fundamental research by raising donations. Either from companies or people that donate through named funds or as private person. But also, from alumni like you and us. In finding the answers to society's challenges, any amount counts. And any donation makes a huge difference.

If you want to donate and contribute to a better, healthier world in which the next generation of engineers can develop their talents, please visit **ufe.tue.nl.** If you want to discuss options for larger or periodical donations as a company or a private person, please reach out to Edith Snelders: **e.w.m.snelders@tue.nl** or Ton Backx: **a.c.p.m.backx@tue.nl.**

F.l.t.r. Edith Snelders, Margot van de Loo, Touria Chraïbi and Yongwei van Bussel Liu

Edith Snelders

Ton Backx

JOIN US AT TUE.NL/ALUMNI

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