

College of Management of Technology

Annual Report 2020

Foreword



2020 is a truly exceptional year to review – the year of the health crisis that affected us all in both our professional and private lives. At EPFL another academic life had to be invented — one meant to replace as far as possible

our campus, our classrooms and seminar rooms, cafeterias, etc. At the CDM — as elsewhere I'm sure — everyone did their best to stay in contact, to pursue at all costs our aims and activities — teach and interact with our students, work together with our PhD students, collaborate as effectively as possible with our administrative teams. From another point of view, this crisis has of course presented us — as academic scholars — with great challenges. We innovation or financial economists and researchers at CDM have significantly contributed to the public debate on these topical issues.

2020 saw the rise of the Enterprise for Society initiative (E4S), directed by Prof. J.-P. Danthine, with its EPFL branch now based at the CDM, like the administration of its Master. This development shows how the theme of durability is becoming an essential part of the CDM's research and teaching agenda – in all its disciplines.

2020 saw the birth of our BA program in management and finance. Thanks to this program, increasing numbers of EPFL students are exposed to our disciplines — management, innovation, entrepreneurship, business analytics and finance — and will be, thereby, better prepared for their future careers.

2020 also saw the first fruits of the new executive education structure. Headed by Eugène de Groot and under the academic supervision of Pr. M. Gruber, ExEd activity at the CDM has undergone a profound transformation, becoming more efficient and

diversified and thus enabling the CDM to offer the EPFL campus an increasingly unique asset.

2020 was the year that our interdisciplinary research program was launched, enabling the CDM to form new links with IC, STI and ENAC.

2020 was also the year that three senior faculty members, Prof. M. Finger, Prof. C. Tucci and Prof. P. Wieser, left the CDM, entailing the closure of three large research chairs, MIR, CSI and LEM. 2020 also gave us the chance to recruit a new finance Professor — Andreas Fuster — who will take up his post in July 2021. A Harvard graduate, Prof Fuster's empirical research, on the effects of new technologies on financial economics, for example, is in perfect coherence with SFI's evolution within the framework of EPFL. In addition, CDM has two more faculty position search campaigns currently ongoing.

2020 was also a tragic year, during which the CDM lost three of its precious members: Onat Tekin (FE Master student), Kilian Schindler (EDMT PhD student) and Sylvie Happe, who worked for the executive education program for many years. We will not forget them.

I extend my appreciation for the work effort and dedication of all CDM members — teachers, students and collaborators — during this challenging year that demanded everyone's adaptability, commitment and patience. The 2020 achievements presented in this report are all yours.

I hope you all enjoy reading this report.

Prof Dominique Foray, Director



Key Numbers2020Organized seminars



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Highlights 2020

Education

February-September | First successful edition of a graduate course linking engineering and management

The first joint Master's course between the School of Engineering (STI) and the College ended successfully at the start of 2020. The course exposes students to entrepreneurial challenges by designing a product to be marketed. The second edition, which had students prepare prototypes under the theme "sustainable technology" started in September 2020.

April | Creation of the Executive Education unit within the College

The College created in Spring 2020 a unit dedicated to centrally manage most of the College's Executive Education programs. This new platform will offer a unique and coherent identity to all the College's Executive program. Prof. Marc Gruber has been named the Academic Director of this unit and Eugène de Groot the Head of Executive Education at the College.

May-November | Launch of new Bachelor courses in management and finance

Starting in September 2020, EPFL Bachelor students had the option to choose new classes in management and finance within the Social and Human Sciences program (SHS). Eight courses are offered by the College for the academic year 2020–2021 in the fields of management, economics and finance.

December | Creation of the new E4S Master of Science in sustainable management & technology

The Enterprise for Society Center (E4S) has launched a new Master of Science which aims at equipping the entrepreneurs and intrapreneurs of the future with the knowledge and skills enabling them to contribute to the transition toward a more resilient, environmentally responsible and inclusive economy while harnessing the power of technology. The Master is offered on behalf of its three partner institutions: The University of Lausanne (UNIL) through its Faculty of Business and Economics (HEC), IMD, and EPFL under the stewardship of its College of Management of Technology. The first cohort will start in September 2021.

Outreach Covid-19 Crisis

During the outbreak of the Covid-19 crisis, faculty members of the College of Management of Technology published several articles from various perspectives (economic, financial, innovation economics, a network industries) which received coverage in the specialized and general media.

April | Covid-19: Insights from innovation economists

Innovation economists at the College — Prof. Dominique Foray and Prof. Gaétan de Rassenfosse and their respective teams — have published a report on the Covid-19 crisis. It covered topics such as "Why is society investing so little in vaccine research?" "What roles do patents play in

this crisis?" "How can we assess the short-term policy (over)reaction in re-allocating so much funding to this field?" and finally, "What are the lessons for the future?"

April | The Covid-19 pandemic: An economic perspective

Prof. Jean-Pierre Danthine, E4S Center (EPFL-UNIL IMD) explored in this study the tension that policymakers face between public-health measures and the economic costs of those measures. The findings were aimed at helping policymakers be better prepared in the event of new pandemic outbreaks.

April | The effects of lockdown on network industries

Prof. Matthias Finger expressed himself as an EPFL expert in the management of network industries. He didn't foresee any water and power supply problems in Switzerland, even with the country in lockdown. As some networks are more crisis-resilient than others, internet access could prove to be more challenging.

May | Financial science and Covid-19

Prof. Erwan Morellec, in collaboration with Professors Jean-Pierre Danthine and Ruediger Fahlenbrach, have published several articles on the bridge loans granted by the Confederation to SMEs that face liquidity needs during the Covid-19 crisis. The authors offer alternatives to SMEs for which these debts are sometimes insurmountable.

November | The impact of the Covid-19 shock on the Swiss labor market

Prof. Luisa Lambertini and her colleague researchers have launched a study determining how the Covid-19 crisis affected working men and women in Switzerland. The research team is interested in the effect of the pandemic on gender inequality in the Swiss labor market. Comparing the impact of the health crisis on the labor market in Switzerland and the United states, they want to assess to what extent the differences in policies can explain differences in unemployment between the two countries.

Research Outreach

June | Intellectual property protection and innovation in Switzerland

Prof. de Rassenfosse published a report in the "SERI dossiers" collection, on IP protection and innovation in Switzerland. The State Secretariat for Education, Research and Innovation publishes prospective studies, research results and reports on topical issues affecting education, research and innovation. These SERI publications are available to a large audience, and therefore contribute to the debate surrounding these issues.

October | Advances in financial technology

For the first time in eleven years, due to Covid-19, Swissquote's annual conference was held entirely online. Entitled "Swissquote Conference 2020 on Finance and Technology", it brought together approximately sixty auditors. The program included two distinct themes: digital central bank currency and differential machine learning.

October | CDM interdisciplinary call

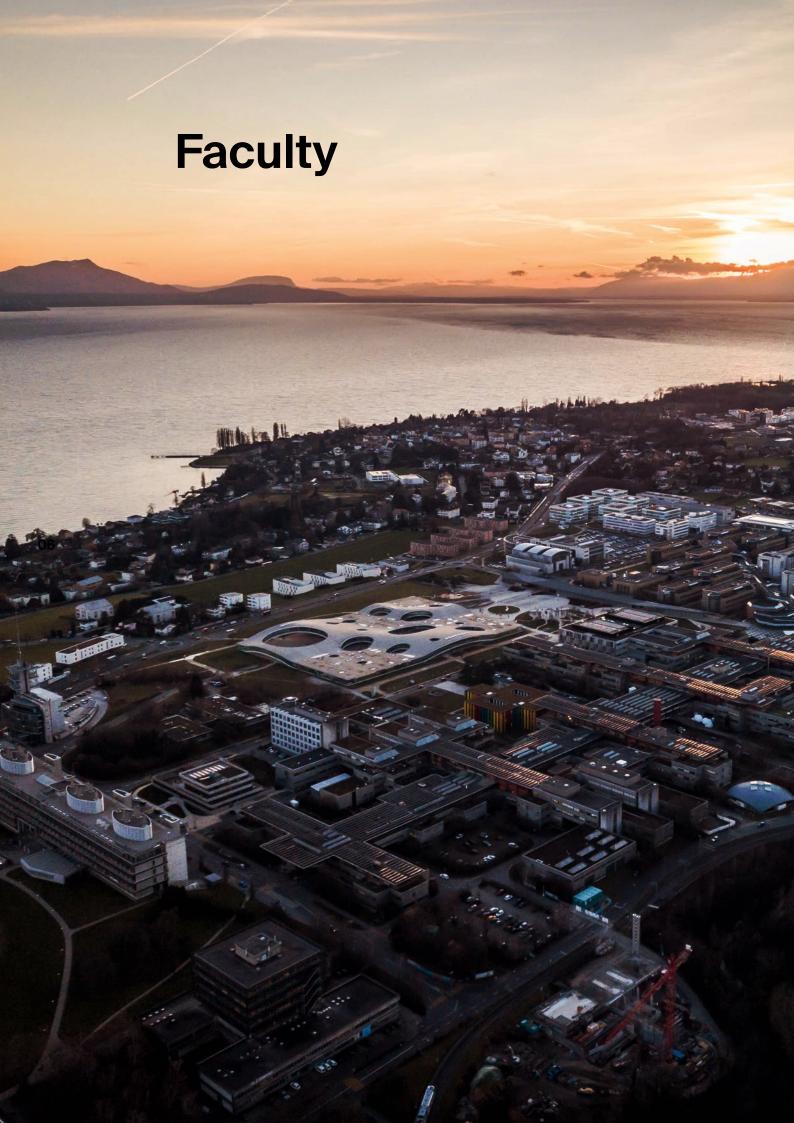
In Fall 2020, the College launched an interdisciplinary call to foster projects that use an interdisciplinary approach and to seed new collaborative research ties between the key research areas of the College of Management of Technology and other research domains present at EPFL. The grant was awarded to three projects, creating new ties with other faculties at EPFL: STI, ENAC & IC.

October | Inauguration of the Kilian Schindler Excellence Award

EPFL and the family of Kilian Schindler have created an award to honor the life and memory of Kilian Schindler, a doctoral student in Management of Technology. It will be attributed once a year to the author of an outstanding doctoral thesis in the Doctoral Program of Management of Technology (EDMT) at the College of Management of Technology.

November 2019 | Finance and tech program

The program inaugurated at the end of 2019 has as its main industry partner Swissquote and is associated with the EPFL Center for Digital Trust. Since the program's inception, its team members have carried out various research projects that have resulted in a sizable list of high-quality publications and working papers. Notably, this research ranges from initial coin offerings, machine learning in asset pricing and portfolio selection, the study of market structure and systemic risk of decentralized, over-the-counter markets, to efficient quantitative methods for option pricing.





→ News

Promotions



March 2020

Rüdiger Fahlenbrach was named Full Professor of Finance in the College of Management of Technology (CDM)

March 2020

Thomas Weber was named Full Professor of Operations, Economics and Strategy in the College of Management of Technology (CDM)

Appointments



March 2020

Prof. Rüdiger Fahlenbrach was appointed Program Director for the Master in Financial Engineering (MFE)

November 2020

Prof. Luisa Lambertini was appointed Associate Vice President for Postgraduate Education, under the new Vice Presidency for Academic Affairs (mandate starting in January 2021)

Invited Professor



January-March 2020

Prof. Linda Louise Tesar, Professor of Economics, University of Michigan

Retirements & Departures



January 2020

Prof. Philippe Wieser, Chair of Logistics, Economics and Management

July 2020

Prof. Matthias Finger, Chair of Management of Network Industries

May 2020

Prof. Christopher Tucci, Chair of Corporate Strategy & Innovation

→ Members and Expertise

Management of Technology & Entrepreneurship Institute



Focal Areas

- Optimization
- · Business analytics
- · Economic analysis
- Technology & IP policy
- Entrepreneurial strategies
- Management of innovation
- Technology commercialization
- Operations & supply chain management

Matthias Finger (January-July) Full Professor | Swiss Post Chair in Management of Network Industries (MIR)



Key words: De- and regulation of network industries | Governance of large socio-technical systems | Infrastructure policy, business-government relations

Dominique Foray

Full Professor & Director | Chair of Economics and Management of Innovation (CEMI)



Key words: Economics of innovation | Science and technology indicators | Technology policy | Knowledge-based economy | Innovation & development | Smart specialization

Marc Gruber

Full Professor | Chair of Entrepreneurship and Technology Commercialization (ENTC)



Key words: Entrepreneurship | Technology commercialization | Innovation | Strategic management | Public policy

Negar Kiyavash

Associate Professor | Chair of Business Analytics (BAN)



Key words: Machine learning | Statistical decision making | Causal interference

Daniel Kuhn

Full Professor | Chair of Risk Analytics and Optimization (RAO)



Key words: Decision-making under uncertainty | Stochastic programming & robust optimization | Uncertainty quantification

Gaétan de Rassenfosse

Assistant Professor (Tenure Track) | Chair of Innovation and IP Policy (IIPP)



Key words: Economics of innovation | Intellectual property policy | Science of science

Ralf Seifert

Full Professor | Chair of Technology and Operations Management (TOM)



Key words: Supply chain strategy and modeling | Digital supply chain initiatives | Inventory optimization

Christopher Tucci (January-May)

Full Professor | Chair of Corporate Strategy and Innovation (CSI)



Key words: Business model innovation | Crowdsourcing, IoT, digitalization and innovation | Innovation management, technology strategy | Technology policy | Regulation of the future (IT, fintech, etc.) | Internet strategy of entrants and incumbents | Technological entry, product development, "creative destruction" | Design thinking

Thomas Weber

Full Professor | Chair of Operations, Economics and Strategy (OES)



Key words: Credit collections | Decision making under risk | Economics (behavioral, environmental, theory) | Engineering economy | Investment criteria | Nonlinear systems | Optimal control | Risk | Sharing economy

Philippe Wieser (January)

Adjunct Professor | Chair of Logistics, Economics and Management (LEM)



Key words: Supply chain strategies | Digital supply chain | Supply chain innovation | Flows and resources optimization | Management of hospital systems | Project management

Kenneth Younge

Associate Professor | Chair of Technology and Innovation Strategy (TIS)



Key words: Data science | Data-driven strategy | Economics of Al

Swiss Finance Institute



Focal Areas

- Asset pricing
- Corporate finance
- Financial economics
- Financial engineering
- Macroeconomics
- · Risk management

Pierre Collin-Dufresne

Rüdiger Fahlenbrach

Full Professor | Professor of finance

Key words: Credit & liquidity risk | Optimal asset allocation | Pricing & hedging



Full Professor | Professor of finance Key words: Corporate finance

& governance | Venture capital | Causes and consequences of financial crises | Banking regulation

Damir Filipovic

Full Professor | Swissquote Chair

Quantitative risk management

Julien Hugonnier

Full Professor | Professor of finance

Key words: Asset pricing theory | Dynamic corporate finance | Decision making under uncertainty



Full Professor | Chair of International Finance (CFI)

Key words: Macroeconomics | International finance | Monetary & fiscal policy

Semyon Malamud Associate Professor |

Professor of finance

Key words: Portfolio selection | Non-linear filtering | Liquidity and asset prices

Erwan Morellec

Full Professor | Professor of finance

Key words: Real options | Financing and capital structure decisions | Liquidity management | Risk management | Economics of innovation and corporate governance



College of Management of Technology



Jean-Pierre Danthine

Adjunct Professor | Professor of finance and economics & Managing Director, E4Society

Key words: Macroeconomics | Financial economics | Monetary policy



"The evolution of EPFL as an institution continues to be astounding on its path to truly global leadership. I am curious to see EPFL evolve further and hope that the deep humanity and generosity of the place encouraging diversity in academic work stays very much intact over the coming years."

Prof. Thomas Weber



→ Publications

Journal Articles



I am what I pledge: The importance of value alignment for mobilizing backers in reward-based crowdfunding. K. Roed Nielsen, J. K. Binder. Entrepreneurship Theory & Practice. 2020.

Informed trading in the stock market and option price discovery. **P. Collin-Dufresne**, V. Fos, D. Muravyev, The Journal of Financial and Quantitative Analysis. 2020.

Liquidity regimes and optimal dynamic asset allocation. P. Collin-Dufresne, K. Daniel, M. Saglam, S. Mehmet. Journal of Financial Economics, vol. 136 (2), pp. 379–406. 2020.

Market structure and transaction costs of index CDSs. P. Collin-Dufresne, B. Junge, A. B. Trolle. Journal of Finance. 2020.

Slow moving capital and trade execution costs: Evidence from a major trading glitch. P. Collin-Dufresne, V. Bogousslavsky, S. Mehmet. The Journal of Financial Economics. 2020.

Monopsony with nominal rigidities: An inverted Phillips curve. C. Dennery. Economics Letters, vol. 191, 109124. 2020.

ICO investors. R. Fahlenbrach, M. Frattaroli. Financial Markets and Portfolio Management. 2020.

A term structure model for dividends and interest rates. D. Filipovic, S. Willems. Mathematical Finance. 2020.

Linear credit risk models. D. Filipovic, D. Ackerer. Finance and Stochastics, vol. 24, pp. 169–214. 2020.

Markov cubature rules for polynomial processes.

D. Filipovic, M. Larsson, S. Pulido. Stochastic Processes and Their Applications, vol. 130 (4), pp. 1947–1971. 2020.

Option pricing with orthogonal polynomial expansions. **D. Filipovic**, D. Ackerer. Mathematical Finance, vol. 30, pp. 47–84. 2020.

Polynomial jump-diffusion models. **D. Filipovic**, **M.** Larsson. Stochastic Systems, vol. 10(1), pp.71-97. 2020.

Systemic risk in networks with a central node. H. Amini, **D. Filipovic**, A. Minca. Siam Journal on Financial Mathematics, vol 11 (1), pp. 60–98. 2020.

Covid-19: Insights from innovation economists. G. Abi Younes, C. Ayoub, O. Ballester Gonzalez, G. Cristelli, G. de Rassenfosse, D. Foray, P. Gaulé, G. Pellegrino, M. van den Heuvel, E. Webster, L. Zhou. Science and Public Policy, 1–13, 2020. On the economics of social innovation – A conceptual framework and its policy implications. A. Cuntz, **D. Foray**, E. Mostovova. Innovation – Organization & Management. 2020.

Smart specialization strategies – Insights gained from a unique European policy experiment on innovation and industrial policy design. **D. Foray**, M. Eichler, M. Keller. Review of Evolutionary Political Economy. 2020.

Closing down the shop: Optimal health and wealth dynamics near the end of life. J. Hugonnier, F. Pelgrin, P. St-Amour. Health Economics, vol. 29 (2), pp. 138–153. 2020.

Frictional intermediation in over-the-counter markets. J. Hugonnier, B. Lester, P-O. Weill. Review Of Economic Studies, vol. 87 (3), pp.1432–1469. 2020.

Learning linear non-Gaussian causal models in the presence of latent variables. S. Salehkaleybar, A. E. Ghassami, N. Kiyavash, K. Zhang. Journal of Machine Learning Research, vol. 21. 2020.

The role of demand in fostering product vs process innovation: A model and an empirical test. H. Dawid, G. Pellegrino, M. Vivarelli. Journal of Evolutionary Economics. 2020.

Distributionally robust inverse covariance estimation: The Wasserstein shrinkage estimator. V. A. Nguyen, D. Kuhn, P. Mohajerin Esfahani. Operations Research. 2020.

Distributionally robust mechanism design. C. Kocyigit, G. Iyengar, D. Kuhn, W. Wiesemann. Management Science, vol. 66 (1), pp. 159–189. 2020.

Distributionally robust optimization with polynomial densities: Theory, models and algorithms. E. de Klerk, D. Kuhn, K. Postek. Mathematical Programming, vol. 181, pp. 265–296. 2020.

Fiscal policy, relative prices and net exports in a currency union. L. Lambertini, C. Pröbsting. 2020.

Mortgage supply and capital regulation in a low interest rate environment. L. Lambertini, Y. Wu. 2020.

Managing inventory with proportional transaction costs. F. Gallien, S. Kassibrakis, **S. Malamud**. Mathematics and Financial Economics, vol.14(1), pp.121–138. 2020.

Lifetime investment and consumption with recursive preferences and small transaction costs. **Y. Melnyk**, J. Muhle-Karbe, F. T. Seifried. Mathematical Finance, vol. 30 (3), pp. 1135–1167. 2020

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Innovation, industry and firm age: Are there new knowledge production functions? **G. Pellegrino**, **M**. Piva. Eurasian Business Review, vol.10 (1), pp. 65–95. 2020.

Sources of knowledge flow between developed and developing nations. **G. de Rassenfosse**, F. Seliger. Science and Public Policy, vol. 47 (1), pp.16–30. 2020.

On the price elasticity of demand for trademarks. **G. de** Rassenfosse. Industry & Innovation, 27(1–2), pp. 11–24. 2020.

Discrimination against foreigners in the U.S. patent system. **G. de Rassenfosse**, R. Hosseini. Journal of International Business Policy, vol. 3(4), pp. 349–366. 2020.

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Mitigating product shortage due to disruptions in multistage supply chains. F. Lucker, S. Chopra, R. W. Seifert. Production and Operations Management. 2020.

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C. Bergenholtz, M. Bogers, T.-M. Brasseur, C. Tucci et al. Industry and Innovation. 2020.

How to market smart products: Design and pricing for sharing markets. **T. A. Weber**. Journal of Management Information Systems, vol. 37(3), pp. 631–667. 2020.

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Robust identification of controlled hawkes processes. M. Mark, T. A. Weber. Physical Review E, vol. 101 (4), 043305. 2020.

The economics of sharing and information security. R. J. Kauffman, T. A. Weber. Journal of Management Information Systems, vol. 37(3), pp. 598–601. 2020.

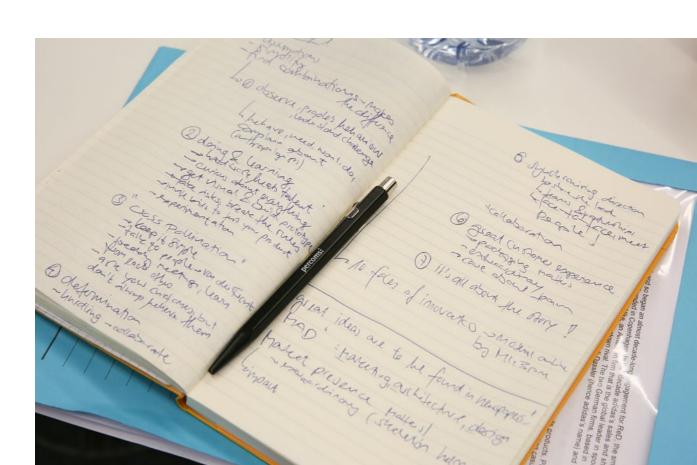
Design of a quality control network for an international food company. S. Voldrich, **P. Wieser**, N. Zufferey. Infor, vol. 58 (1), pp.1–16. 2020.

Optimizing the trade-off between performance measures and operational risk in a food supply chain environment. S. Voldrich, P. Wieser, N. Zufferey. Soft Computing, vol. 24 (5), pp. 3365–3378. 2020.

Dating death: An empirical comparison of medical underwriters in the U.S. life settlements market. J. Xu. North American Actuarial Journal, vol. 24(1), pp. 36–56. 2020.

Motivating innovation: The effect of loss aversion on the willingness to persist. Y. Rosokha, K. Younge. Review of Economics and Statistics, vol.102(3), pp.569–582. 2020.

Patent citations reexamined. J. Kuhn, K. Younge, A. Marco. Rand Journal of Economics, vol. 51(1), pp. 109–132. 2020.



Books & Book Chapters



Entrepreneurship and identity. E. Fauchart, **M. Gruber**, in Brown, A.D. (Ed.) The Oxford Handbook of Identities in Organizations. Oxford University Press, 2020.

The digital supply chain challenge: Breaking through. R. W. Seifert, R. Markoff, IMD Publishing, 2020.

Conference Proceedings



Societal impact at the nexus of entrepreneurship and community — Taking stock and looking ahead. S. Bacq, C. Hertel, T. Lumpkin. Academy of Management Best Paper Proceedings 2020, Entrepreneurship Division. Academy of Management. 2020.

A catalyst framework for minimax optimization. J. Yang, S. Zhang, N. Kiyavash, N. He. Advances in Neural Information Processing Systems 33.

Achievability of nearly-exact alignment for correlated Gaussian databases. O. E. Dai, D. Cullina, **N. Kiyavash**. 2020 IEEE International Symposium on Information Theory (ISIT), 1230-1235.

Characterizing distribution equivalence and structure learning for cyclic and acyclic directed graphs.

A. Ghassami, A. Yang, **N. Kiyavash**, K. Zhang. International Conference on Machine Learning, 3494-3504.

Global convergence and variance reduction for a class of nonconvex-nonconcave minimax problems. J. Yang, N. Kiyavash, N. He. Advances in Neural Information Processing Systems 33.

Lazylter: A fast algorithm for counting Markov equivalent DAGs and designing experiments. A. Ahmadi Teshnizi, S. Salehkaleybar, **N. Kiyavash**. International Conference on Machine Learning, 125–133.

Model-augmented conditional mutual information estimation for feature selection. A. Yang, A. E. Ghassami, M. Raginsky, N. Kiyavash, E. Rosenbaum. Conference on Uncertainty in Artificial Intelligence, 1139–1148.

The devil is in the detail: A framework for macroscopic prediction via microscopic models. Y. Yang, N. Kiyavash, L. Song, N. He. Advances in Neural Information Processing Systems 33.

Planning supply with 'opportunity goods': Complementing premium parts with select discount components. **T. A. Weber**. ICCMB 2020: Proceedings of the 2020 the 3rd International Conference on Computers in Management and Business, 243–247. 2020.

Nonlinear pricing of shareable products. **T. A. Weber**. Proceedings of the 53rd Hawaii International Conference on System Sciences, 6023–6032. 2020.

PhD Theses



Institutions and incentives in knowledge production and diffusion: From science to innovation. **C. C. Ayoubi**, D. Foray (Dir.). EPFL Lausanne. 2020.

The organisation of science: Topics, incentives and funding. **O. Ballester Gonzalez**, G. de Rassenfosse (Dir.). EPFL Lausanne. 2020.

Financing biomedical ventures – Myths and realities. J. S. Behrens, C. Tucci (Dir.). EPFL Lausanne. 2020.

Essays in financial economics. **K. Fabisik**, R. Fahlenbrach (Dir.). EPFL Lausanne. 2020.

Entrepreneurship across sociocultural contexts: Empirical and theoretical perspectives. **S. E. Foy**, **M**. Gruber (Dir.). EPFL Lausanne. 2020.

Essays in financial economics. M. A. Frattaroli, R. Fahlenbrach (Dir.). EPFL Lausanne. 2020.

Distributional robustness in mechanism design. C. Kocyigit, D. Kuhn (Dir.). EPFL Lausanne. 2020.

The shaping effects of innovation and technology: From micro business model evolution to macro environment sustainability. Q. Lu, C. Tucci (Dir.). EPFL Lausanne, 2020.

The triangular value of patents. **A. Neklyudova-Khairullina**, C. Tucci (Dir.). EPFL Lausanne. 2020.

Scalable stochastic optimization: Scenario reduction with guarantees. K. Schindler, D. Kuhn (Dir). EPFL Lausanne. 2020.

Wasserstein distributionally robust learning. S. Shafieezadeh Abadeh, D. Kuhn (Dir.). EPFL Lausanne. 2020.

Metropolitan innovation systems: Inquiry into the coevolving relations between industry, university and government. J. Shen, M. Finger (Dir.), M. Gruber (Dir.). EPFL Lausanne. 2020. 2020.

Trading mechanisms in over-the-counter markets. S. Vogel, P. Collin-Dufresne (Dir.). EPFL Lausanne. 2020.

Assessing technology adoption in the European air traffic management: The cases of virtual centre and flight-centric operations. **E. Zeki**, M. Finger (Dir.). EPFL Lausanne. 2020.

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→ New Grants, Ranking & Awards

Grants



Funding agency or company	Principal investigator	Project
Swiss Confederation	Negar Kiyavash	Experiment design for causal structural learning
SNSF - Swiss National Science Foundation	Ralf Seifert	Quantitative methods for omnichannel decision making
SNSF - Swiss National Science Foundation	Pierre Collin- Dufresne	Demand based asset pricing and ESG preferences
Norwegian Finance Initiative (NFI)	Rüdiger Fahlenbrach	Evolution and determinants of insti- tutional investor preferences and their impact on portfolio companies
SNSF - Swiss National Science Foundation	Semyon Malamud	International macroeconomics with financial frictions

Ranking



UTD Top 100 Business School Research Rankings in the field of Management, Operations & Finances, established the UTD Dallas' Naveen Jindal School of Management (period 2009–2020)

 Per Capita analysis (University publications in 24 leading business journals over University Business School Faculty size): 1st in Switzerland.

Forschungsmonitoring rankings in the field of Business Administration and Economics, established by the Swiss Economic Institute (KOF) at ETH Zurich

- Based on all publications from 2016—2020, it lists 14 professors from the College of Management of Technology in the top 10% of all the scientist & economists distributed over different categories (current ranking, young scholar, lifetime ranking), in the German speaking countries Germany, Austria, and Switzerland.
- Based on the publications in the top journals only in the field of Business Administration, the EPFL ranks 4th in comparison to the best universities in the German speaking countries Germany, Austria, and Switzerland.

Awards



June 2020 | Prof. R. Seifert wins the EFMD Case Writing Award

The case "Workshop: Building an industry 4.0 transformation roadmap", written by Prof. Ralf Seifert and Dr Richard Markoff, won the 2019 EFMD Case Writing Competition in the Supply Chain Management category.

October 2020 | C. Kocyigit wins the Kilian Schindler Excellence Award EPFL and the family of Kilian Schindler have created an award to honor the life and memory of Kilian Schindler, a doctoral student in Management of Technology. Dr Cagil Kocyigit — a former PhD student at the Risk Analytics and Optimization Chair — was the laureate of its first edition for her PhD thesis entitled "Distributional robustness in mechanism design".



About the Kilian Schindler Excellence Award:

"I am extremely honored to receive the Kilian Schindler Excellence Award, named after my dear friend and colleague. Kilian was an outstanding researcher and has greatly inspired me and everyone else around him, both scientifically and personally. It is therefore very special and also emotional for me to be the first recipient of this award."

Cagil Kocyigit, 2020 laureate

November 2020 | M. Mark wins INFORMS Best Student Paper

With the presentation of his paper "A reinforcement-learning approach to credit collections", Michael Mark — a PhD student at the Chair of Operations, Economics and Strategy — won the Best Student Paper Award in Finance at the 2020 INFORMS Annual Meeting.

November 2020 | Dr S. Shafieezadeh Abadeh wins the Thesis Distinction for EDMT Dr Soroosh Shafieezadeh Abadeh — former PhD student with Prof. Daniel Kuhn — was awarded the 2020 Doctoral Program Thesis Distinction for the Doctoral Program in Management of Technology (EDMT).

December 2020 | Prof. D. Kuhn wins the Frederick W. Lanchester Prize

The 2020 Frederick W. Lanchester Prize was awarded to Prof. Peyman Mohajerin Esfahani and Prof. Daniel Kuhn for their paper "Data-driven distributionally robust optimization using the Wasserstein metric: Performance guarantees and tractable reformulations" (Mathematical Programming 2018). This prize recognizes the best contribution to operations research and the management sciences published in English in the past five years.

December 2020 | L. Zhou wins the 1st Prize in the 4iP Council Research Competition With her paper "Patents and supra-competitive prices: Evidence from consumer products", coauthored with Prof. de Rassenfosse, PhD student Ling Zhou won the 1st Prize of the 2020 4iP Council, a European research council dedicated to developing high quality academic insight and empirical evidence on topics related to intellectual property and innovation.

→ Research Seminars

Management of Technology & Entrepreneurship Institute



Due to the pandemic, seven additional seminars were cancelled.

- 24.01 Prof. Guido Palazzo, HEC Lausanne Sustainability lecture for supply chain leaders.
- 20.02 **Prof. Elie J. Sung**, HEC Paris

 Non-market strategy performance in the court: The role of information and legitimacy.
- 28.02 **Siddharth Suri, M**icrosoft Research
 Computational Social Science and Economics
 Seminar Series.
 Ghost work: The labor that powers AI.
- 11.05 **Prof. Henry Sauermann**, ESMT Berlin What's the problem? Crowdsourcing research questions in science.
- 02.11 **Dr Lisa Hehenberger**, ESADE Internalizing social impact through calculative devices: The case of impact investing.

EPFL Virtual Innovation Seminar EVIS 2020



Due to the pandemic and the impossibility to organize on-site seminars, the College put into place a new virtual bi-weekly seminar series focusing on science, technology and innovation topics, studied through the lens of economics, entrepreneurship, and strategy, and targeted at graduate students and early-career researchers.

- 21.12 **Mike Andrews**, University of Maryland, Baltimore County Bar talk: Informal social interactions, alcohol prohibition, and invention
- 07.12 **Wolf-Hendrik Uhlbach**, Copenhagen
 Business School
 Exploring-by-hiring: High-skilled migration as
 a source of exploration?

- 23.11 Astrid Marinoni, University of Toronto, Rotman School of Management Immigration and entrepreneurship: The role of enclaves
- 09.11 **Muly San**, New York University, Department of Economics

 Labor supply and directed technical change:

 Evidence from the abrogation of the Bracero program in 1964"
- 26.10 **Keith Pennington**, University of Minnesota *Varying serendipity between inventors.*
- 12.10 **Ryan Hill**, MIT, Northwestern Kellogg Scooped! Estimating rewards for priority in science.
- 28.09 Chungeun Yoon, University of Notre Dame Inventors and firm innovation: Evidence from the U.S. World War I draft"
- 14.09 **Chiara Spina**, Bocconi University/INSEAD Small changes with big impact: Experimental evidence of a scientific approach to the decision-making of entrepreneurial firms.
- 31.08 Maria Roche, Georgia Tech/HBS
 Entrepreneurs (co-)working in close proximity:
 Impacts on technology adoption and startup
 performance outcomes.
- 17.08 **Tristan Fitzgerald**, Texas A&M University Shared culture and technological innovation: Evidence from corporate R&D teams.
- 03.08 **Dennis Byrski**, Max Planck Institute for Innovation and Competition

 Fire and mice: The effect of supply shocks on basic science.
- 20.07 Maria Kurakina, Berkeley Haas / University of Utah, David Eccles School of Business
 The dark side of patents: Effects of strategic patenting on firms and their peers.
- 06.07 **Andreas Diemer**, LSE

The geography of social connectedness and knowledge flows in the United States: New evidence from patent citations.

- 22.06 **Sara Signorelli**, Paris School of Economics Too constrained to grow. Analysis of firms' response to the alleviation of skill shortages.
- 08.06 Enrico Berkes & Peter Nencka, Ohio State University

Knowledge access: The effects of carnegie libraries on innovation.

25.05 Caroline Fry, MIT Sloan

Viral privilege: Evidence from the ebola epidemic.

Swiss Finance Institute



Due to the pandemic, thirteen additional seminars were canceled.

- 14.02 **Victor Duarte**, UIUC, Gies College of Business *Viral privilege: Evidence from the ebola epidemic.*
- 28.02 **Mike Burkart**, LSE

 The social value of debt in the market for corporate control.
- 12.03 **Alexis Marchal**, PhD candidate, SFI@EPFL Deep learning for asset bubbles detection.
- 15.05 **Victoria Vanasco**, CREI, UPF & Barcelona GSE The good, the bad and the complex: Product design with imperfect information.
- 29.05 **Robin Lumsdaine**, American University Washington DC

The coincidences of sectoral slowdowns in the UK: Comparing transmission probabilities and economic linkages.

- 12.06 **Matthieu Bouvard**, Toulouse School of Economics *Labor leverage, coordination failures, and systematics risk.*
- 04.09 **Jesus Fernandez-Villaverde**, University of Pennsylvania *Financial frictions and the wealth distribution.*

- 11.09 **Bryan Kelly**, Yale *Textual analysis in asset pricing.*
- 18.09 **Uday Rajan**, University of Michigan Strategic intermediation in liquidity markets.
- 01.10 **Pierre Collin-Dufresne**, SFI@EPFL *Job market workshop.*
- 02.10 **Hanno Lustig**, Stanford *Manufacturing risk-free government debt.*
- 14.10 **Ramil Zelyatdinov**, Litasco SA *MFE practitioner seminar.*
- 30.10 Morten Linnemann Bech, BIS Innovation Hub, Antoine Savine & Brian Huge, Superfly Analytics at Danske Bank Swissquote conference 2020 on finance and technology.
- 04.11 **Viktor Vatinas**, Partner Group AG *MFE practitioner seminar.*
- 11.11 Alain Forclaz & François Chareyron, Lombard Odier MFE practitioner seminar.
- 17.11 **Goutham Gopalakrishna**, PhD candidate, SFI@EPFL
 Asset pricing with realistic crises dynamics.
- 18.11 **Guillermo Garcia**, Procter & Gamble *MFE practitioner seminar.*
- 20.11 **Winston Dou**, University of Pennsylvania Feedback and contagion through distressed competition.
- 25.11 **Anton Merlushkin**, Credit Suisse *MFE practitioner seminar.*
- 04.12 **Estefania Santacreu-Vasut**, ESSEC Business School

Is gender in the pocket of investors? Identifying gender bias towards CEOs with a lab experiment.

11.12 **Laurence Lescourret**, ESSEC Business School Feedback and contagion through distressed competition.





→ Overview

Master Programs

Z

- MTE Master in Management, Technology and Entrepreneurship
- MFE Master in Financial Engineering
- . Minors MTE and MFE

Doctoral Programs

V

- EDMT Doctoral program in Management of Technology
- EDFI Doctoral program in Finance

Executive Master Programs

Z

- EPFL EMBA
- Executive Master in Global Supply Chain Management

Certificate of Advanced Studies

 \angle

- Management of Biotech, MedTech and Pharma Ventures
- Healthcare Supply Chain Management (HSCA)
- Global Supply Chain Management
- Supply Chain Analytics and Greenbelt
- Supply Chain 4.0 Innovation and Digitization
- Supply Chain 4.0 Leading Sustainable Change

Short Executive Programs

 \angle

- Data Science for Managers
- Transform Tech joint program IMD and EPFL

Other



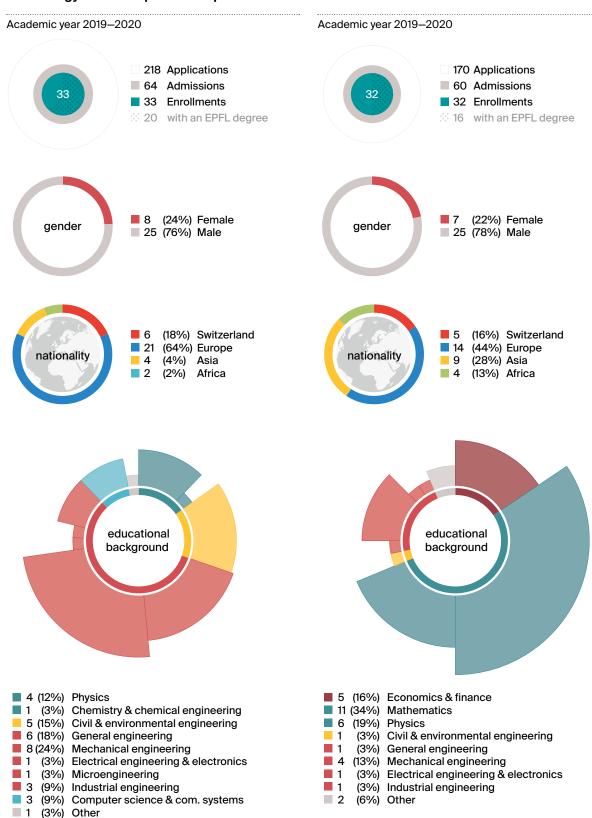
- Bachelor SHS-MGT courses
- MOOCs

20

→ Master Programs

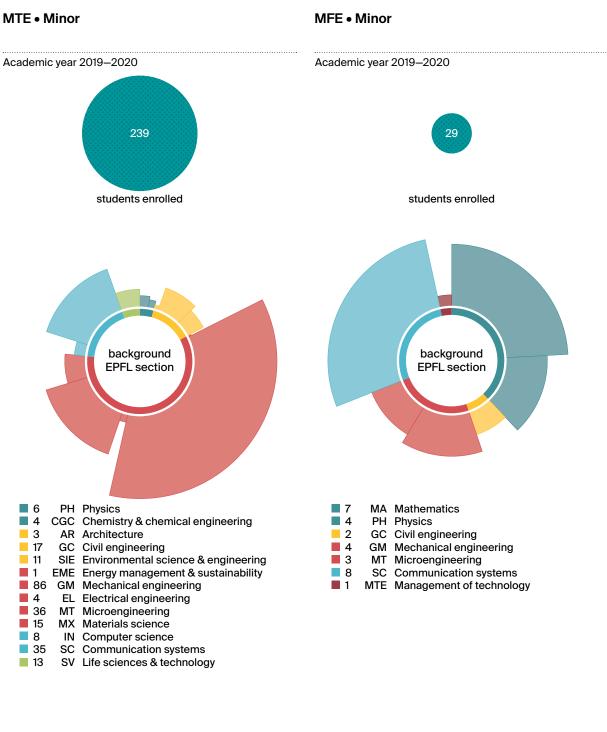
MTE • Master in Management, Technology and Entrepreneurship

MFE • Master in Financial Engineering



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→ Minors



MTE • Exchange students

Academic year 2019–2020

MFE • Exchange students

Academic year 2019-2020





→ Doctoral programs

EDMT • Doctoral program EDFI • Doctoral program in Management of Technology in Finance 101 Applications 188 Applications ■ 12 Enrollments Enrollments Overall graduates since 2005: 101 Overall graduates since 2011: 29 45 (45%) Female ■ 4 (14%) Female gender gender ■ 56 (55%) Male 25 (86%) Male 17 (17%) Switzerland 10 (35%) Switzerland ■ 46 (45%) Europe ■ 15 (52%) Europe nationality 19 (19%) Asia nationality 3 (10%) Asia (3%) Africa 3 (3%) Americas ■ 12 (12%) Americas (4%) n/a ■ 42 (42%) Academic ■ 16 (55%) Academic 45 (45%) Industry ■ 13 (45%) Industry career career (6%) Public organization (8%)



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3 theses awarded in 2020



About the SHS-MGT Bachelor course:

"The course is what I expected and I really appreciated the fact that business leaders attended our pitch. Their feedback and advice were very useful to me. I could use them in the future in my career, particularly for job interviews."

Neethu Kizhakkedom, a second-year bachelor student in Life Sciences



About the MTE Master program:

"The MTE program provided me with a well-rounded experience and perspective into many industries and aspects within a business. It gave me much greater breadth into the technical and entrepreneurial domains than anything I could've have expected to receive from a traditional management or MBA program."

Andres Engels (graduate 2020)



About the Doctoral program in finance:

"I am lucky that my supervisors always took the time to discuss with me whenever I needed guidance and always supported the research directions I was interested in. Having freedom in your research process helps you select the most interesting problems for you and keeps you motivated. This is important given that a PhD is a long and bumpy journey. I could also count on the other PhD students to create engaging conversations whenever I needed someone else's opinion. Overall I was fortunate to find a very collaborative environment here at EPFL."

Alexis Marchall, EDFI



About the CAS in Management of Biotech, Medtech & Pharma Ventures:

"The CAS allowed me to deepen my knowledge of regulated industries and gain multiple valuable industry connections. It is an excellent program with a remarkable selection of speakers"

Ksenia Tugay, Aston Life Sciences



About the EPFL EMBA:

"The program provides an excellent overview of technology innovation and general business education and allowed me to get a holistic overview of different business processes in a company. The program helped me to think differently and gave me the right foundation for future business and related technology challenges."

Fabio Ponzio, Vice President Building Solutions at Hexagon Geosystems (graduate 2019)

About the short Executive program "Data Science for Manager":

"This very intensive course gave me a comprehensive overview of a vast and fast-moving domain. The engaging teaching by Prof. Younge and his team — with lectures and many hands-on exercises — helps you to understand the complicated concepts."

Hessel Brouwer, Head of Financial Control, Dätwyler

→ Executive Education

Executive Master Programs



EPFL EMBA

Director: Dr Tilo Peters Academic Director: Prof. Christopher Tucci / Prof. Marc Gruber (since September 2020)

Program given since 1998, with an average of 30 students per class:

- 85 ECTS credits
- 16 months (40 weekdays) duration
- 612 graduated students since inception

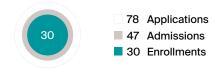
Global Supply Chain Management

Director: Elaine Moran Academic Director: Prof. Philippe Wieser / vacant (since February 2020)

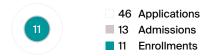
Program given since 1993, with an average of 20 students per class:

- 90 ECTS credits
- 15 months (35 weekdays) duration
- 872 graduated students since inception

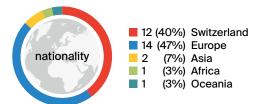
2020 cohort

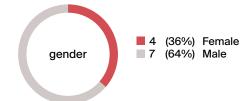


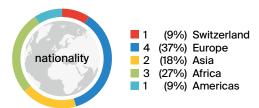
2020 cohort











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Certificate of Advanced Studies (CAS)

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Program name	Credits	Students
Management of Biotech, MedTech and Pharma Ventures	10 ECTS	31
Healthcare Supply Chain Management (HSCA)	12 ECTS	7
Global Supply Chain Management	14 ECTS	5
Supply Chain Analytics and Greenbelt	14 ECTS	2
Supply Chain 4.0 Innovation and Digitization	14 ECTS	2
Supply Chain 4.0 Leading Sustainable Change	14 ECTS	2

Short Executive Programs

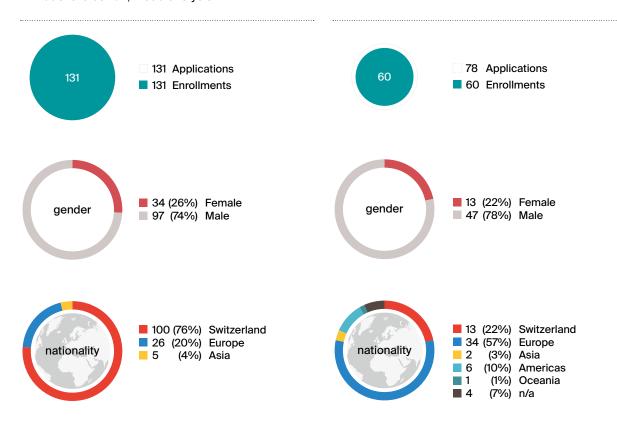


Data Science for Managers

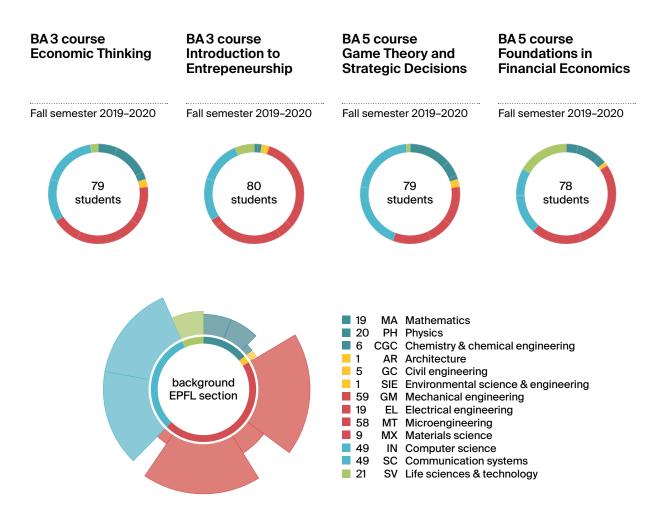
- 5-day technical Boot Camp, two times a year
- 2-day executive Fast Track, two times a year
- 4 workshops: Phython quick start, Text as data, Model evaluation, Fraud analysis

Transform Tech Joint Executive Education program IMD and EPFL

• 5-day course, two times a year



→ Bachelor SHS-MGT Courses



→ MOOCs

MOOC (massive open online course) name	Professor in charge
Smart Specialization (English & French versions)	Dominique Foray
Interest Rate Models	Damir Filipovic
Innovative Governance of Large Urban Systems	Matthias Finger
Smart Cities - Management of Smart Urban Infrastructures	Matthias Finger
Management of Urban Infrastructures - part 1	Matthias Finger
Global Arctic	Matthias Finger
Find the right markets for your innovation – A tool for entrepreneurs and innovators for choosing which markets to play in	Marc Gruber
Launching New Ventures	Christopher Tucci & Marc Gruber

Media Outreach

06.01 Ralf Seifert

Shanghai Daily-Shine \(\textit{D}\) Bezos' Big Bet: Going for Market Share over Profits

14.01 Jean-Pierre Danthine

CNN Money Switzerland ☐ SNB profits "belong to the people," says ex-board member Danthine

14.01 **Jean-Pierre Danthine**

CNN Money Switzerland ☐ The SNB should be protected from giving money to pensions, says Danthine

15.01 Matthias Finger

RTS Un - A bon entendeur □ Les prix des billets CFF & □ Bonus

16.01 **Jean-Pierre Danthine**

RTS La 1ère - La Matinale □ L'invité

16.01 **Jean-Pierre Danthine**

Swissinfo 🛮 Danthine (ex BNS): attivisti più efficaci in aeroporti che banche

17.01 **Jean-Pierre Danthine**

CNN Money Switzerland ☐ Switzerland invents the "business school of the future"

25.02 Jean-Pierre Danthine

Le Matin Dimanche ☐ Faut-il interdire Easyjet?

19.03 Matthias Finger

SRF 1 - 10 vor 10 □

26.03 Jean-Pierre Danthine

Le Temps ☐ *La Suisse peut gommer le coût économique du Covid-19*

06.04 Ralf Seifert

Forbes India 🖸 Digesting the shocks: how supply chains are adapting to the Covid-19 lockdowns: Coping in a unique moment

14.04 Jean-Pierre Danthine

nzz.ch 🗗 Corona-Krise: So wollen Schweizer Ökonomen das Land vom Lockdown befreien

15.04 Jean-Pierre Danthine

Le Temps ☑ *Même agile, l'économie suisse* est mal prise par la crise du coronavirus

17.04 Matthias Finger

Le Temps Le long combat de PostFinance pour devenir une vraie banque

27.04 Jean-Pierre Danthine

28.04 Erwan Morellec

Le Temps \(\textit{ZRemboursement des crédits-relais:quedit la science nancière?} \)

04.05 Erwan Morellec

La Liberté 🖾 Menace sur les banques

05.05 Jean-Pierre Danthine, Erwan Morellec

Le Temps 🗅 Crédits-relais: une nouvelle forme de titres éviterait le risque de faillite des PME

06.05 Dominique Foray, Gaétan de Rassenfosse

VOXEU ☐ The take of innovation economists on the Covid-19 crisis

07.05 Jean-Pierre Danthine, Erwan Morellec

L'Agefi 🖾 Une proposition « gagnantgagnant » pour améliorer le soutien financier fédéral aux PME

08.05 Dominique Foray, Gaétan de Rassenfosse

Le Temps 🖾 Les raisons du sousfinancement de la recherche sur les vaccins

12.05 Dominique Foray, Gaétan de Rassenfosse

RTS La 1ère - Alter Eco 🖾 Brevets et sous-investissements, obstacles au vaccin?

15.05 Jean-Pierre Danthine

RTS Un - Infrarouge 🖸 Coronavirus : l'épidémie de pauvreté ?

20.05 Jean-Pierre Danthine, Erwan Morellec, Rüdiger Fahlenbrach

Finanz & Wirtschaft \square *Unterstützung für Schweizer KMU*

25.05 Jean-Pierre Danthine

La Liberté *☐ Le trésor de la BNS est très convoité*

26.05 Jean-Pierre Danthine

Le Nouvelliste 🖾 BNS, un trésor très convoité

27.05 **Dominique Foray**

Le Temps *□ La réponse des sciences de la vie*

27.05 Gaétan de Rassenfosse

RTS La 1ère - La Matinale L'invité

15.06 Jean-Pierre Danthine, Erwan Morellec, Rüdiger Fahlenbrach

Neue Zürcher Zeitung ☐ *Und was kommt nach dem Überbrückungskredit?*

15.06 Matthias Finger

AES ☐ Stratégies pour la smart energy: villes intelligentes

29.06 Jean-Pierre Danthine

Heidi.news ☐ Ma rencontre avec Jean-Pierre Danthine, moniteur de crises

03.08 Matthias Finger

Le Matin Dimanche 🗹 La tournée quotidienne des facteurs est remise en question

31.08 Rüdiger Fahlenbrach

NZZ am Sonntag ☑ Die Gipfelstürmer aus Baar: von null auf 24 Milliarden

14.09 Dominique Foray, Gabriele Cristelli

Le Temps 🛮 La contribution des inventeurs immigrés à l'innovation en Suisse

15.09. Dominique Foray, Gabriele Cristelli

Le Courrier International ☐ Innovation. En Suisse, immigrés et expatriés boostent l'économie

07.10 Marc Gruber

Bilan 🛮 Innover en période d'incertitudes grâce à une approche méthodologique

28.10 Ruediger Fahlenbrach

Finanz & Wirtschaft 🗹 Wenn der Chef kaum Aktien hält

17.11 Gaétan de Rassenfosse

La Vie économique ☐ *Le système de brevets est-il toujours d'actualité*?

25.11 Matthias Finger

25.11 Matthias Finger

Radio SRF1 🖾 Subventionsaffäre: Das Bundesamt für Verkehr hat eine Anzeige gegen die BLS-Führung eingereicht

14.12 Jean-Pierre Danthine

Le Matin Dimanche 🖾 La neutralité carbone en 2025? Ce serait possible

22.12 Jean-Pierre Danthine

La Liberté 🖾 Mesurer une croissance décarbonnée

22.12 Jean-Pierre Danthine

Le Nouvelliste 🖸 *Une croissance décarbonée* à mesurer



Facts

→ Personnel

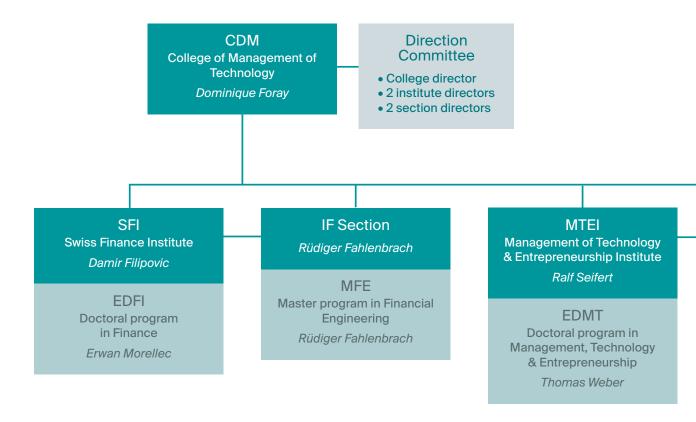
	Budgetary	Third party		%
in FTE	funds	funds	Total	women
Total staff	67.54	23.01	92.55	42%
Professors	13.9	0.00	15.9	13%
Full professors	10.00	0.00	12.00	8%
Associate professors	2.90	0.00	2.90	34%
Assistant professors	1.00	0.00	1.00	0%
Scientific staff	38.84	18.61	57.95	37%
Adjunct professors	0.00	0.00	0.5	0%
Senior scientists / postdocs	9.35	5.05	14.4	38%
PhD students	29.49	13.56	43.05	37%
Administrative & technical staff	14.80	4.40	18.70	81%
Administrative staff	12.20	4.40	16.5	91%
Technical staff	2.60	0.00	2.6	0%
Apprentices	0.00	0.00	0.00	0%

→ Expenditures

Federal fund (dotation)	9 868 714 CHF	74.2%
Other pluriannual federal funds	147 024 CHF	1.1%
Education programs and seminars	1 072 448 CHF	8.1%
SNSF	969 435 CHF	7.3%
Sponsored Chairs	652 664 CHF	4.9%
Industry grants	243 406 CHF	1.8%
Other confederation grants	144 411 CHF	1.1%
■ EPFL Innovation grants	88 311 CHF	0.7%
■ European programs	76 205 CHF	0.6%
■ Innosuisse (SCCER)	29 317 CHF	0.2%
Donation	3 845 CHF	<0.1%
Total	13 295 780 CHF	100%



Organizational Chart



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MTE Section Danier Kuhn

MTE

Master program in
Management, Technology
& Entrepreneurship

Daniel Kuhn

CDM Direction

Dominique Foray

EXED

Executive Education programs

Eugène De Groot

Central Services Shirit Cohen

Communication

Administrative services

Finances

IT Services

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Photos: cover by Jon Tyson on Unsplash, p.6, 10 and 28 by Jamani Caillet / EPFL, p.12 and 18 by Alain Herzog / EPFL.

Project: CDM

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