

# Your choice, you and the others:

*Networks of Opportunity and our common goods in times of uncertainty*

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Carnegie Mellon University's Honorary Doctor of Science and Technology, 2022

Brief note to support a keynote speech at

**Carnegie Mellon University's Commencement ceremony for Masters and PhD students 2022**

Friday, May 13

I am very honored to be with you today for your commencement at **one of the finest universities in the world.**

Master and PhD classes of 2020, 2021 and 2022, You should be extremely happy and proud of your achievements and milestones. Very Well done!...

But, above all, **Be happy:**

- this is not the end.
- Your journey is just starting. You are **now empowered to lead the future.**
- We are all in "your hands". **We are here because we trust you and your generation.**

**Your families and friends are certainly very proud and honored to be with you today celebrating your accomplishments and you should feel uniquely accomplished that you made their dreams come true. Well done!**

And the **Carnegie Mellon faculty, staff and community are certainly proud for educating you, working with you and learning from you. You are now empowered to "lead our common future".**

I acknowledge all of those that have made **Carnegie Mellon one of the world leading universities able to attract you and the support of your families.**

**Being here today is a unique experience,** that I share with all of you. Students, families, friends and the CMU faculty and communities.

I thank **President Farnam Jahanian and the CMU faculty for awarding me the Honorary Doctor of Science and Technology** and acknowledge my colleagues in the podium that are also recognized today with CMU's honorary degrees.

I believe that the main reason for being awarded this degree is that **I have always behaved as a student, as a "learner". And I strive to continue to do so.**

I was born in a school environment and **I learnt a lot from my parents, from their parents and from their grandparents - all educators and professors.** And I learnt even more **from my peers**, and much much more from **my students and from their students.**

From my experience of more than 12 years in the government of Portugal, **I learnt that we all benefit by guaranteeing that everyone is entitled to new knowledge-based opportunities, however isolated and underprivileged one might be.**

I also learnt the importance of creating **networks of opportunity** for everyone. Under this premise, we partnered some 15 years ago with **Carnegie Mellon in a joint venture** and, today, we are proud that this partnership **is recognized as a great success.**

Portugal is a small and old European country, with a troubled colonial history, glorified under a dictatorial regime for half of the 20<sup>th</sup> century. That regime survived for so long by repressing freedom, oppressing the youth and keeping it under-educated. **But this year we passed an important threshold: proudly celebrating more days lived in democracy than those lived under the dictatorial regime.**

Today Portugal **has one the most educated young European populations** and a flourishing entrepreneurial spirit, with **one of the highest concentrations of unicorn firms in Europe**, being now a world **reference for engineers and computer scientists, writers, architects and artists**.

As a **learner**, I strive to **team up with the best in the world, and this is what I found at CMU**: The ability of world leaders to work together, across disciplines, through a unique transdisciplinary and interdisciplinary landscape, from the arts and humanities to exact and natural sciences, including engineering, business, computer science and public policy.

I would like to extend a very special thanks to **all of those that I met at CMU over the last 25 years**. In particular, let me thank again **President Farnam Jahanian**, but also the previous **Presidents that I worked with, Jerry Cohen and Subra Suresh**.

Also, **former provost Kamlet** and current **Provost and former Dean of Engineering Jim Garrett** and **former Dean of Engineering Pradeep Khosla**.

Through them, **I acknowledge all CMU's faculty, alumni and students**. And, in particular, I must refer to two very special people I had the privilege to work with very closely and meet over the last 25 years: **Granger Morgan (EPP) and José Moura (ECE)**, both Institute Professors.

**This is what I have learnt from all of you: To strive to find the best world leaders and work with them.**

This is the **best recommendation that I can give all of you**, based on my own experience: **Team up with world leaders and keep learning together!**

Master and PhD classes of 2020, 2021 and 2022, **across all disciplines**, from the Arts and humanities, to natural and exact sciences, engineering and computer science, social sciences, business, law and policy studies, **value what makes you unique, but learn how to work together and find common ground**.

When I finished my post-graduate studies in the US, some 35 years ago, the future seemed brighter than today. It was the time of the **fall of the Berlin Wall and the end of Cold War**, Portugal was already a full democratic country and had joined the European Union, the **internet was exploding and the roots of web 2.0 were being launched**, together with **global market integration**.

But now **you face big uncertainties and unique challenges** - **climate disaster, pandemic, war, inequality, attack on basic rights, changes in the labor market, fake news**, to name a few.

**We trust you to face and address these challenges and do better than my generation; that is, to leave to your own children a world better than the one you inherited from my generation.**

Let me briefly convey **three main messages** to all of you.

1. Message 1: Keep learning, by being ambitious and innovative. Change the world, making use of your knowledge, but guaranteeing that all others are also ambitious and innovative

Guarantee that “Your parents and the parents of your friends really don’t understand what you are doing!”...

The number of young adults who are able to say “**My parents really don’t understand what I’m doing!**” about their work is probably the best indicator of progress in any society. It means each generation explores new things, and has the collective opportunities to do so.

That is a healthy sign. It is a **generational changing movement in a dynamic and continuously learning environment**.

**Start with and work on your own ideas, invest on them, do and insist on research**, exchanging views with others and test and validate them, until you have a greater idea, scientifically sound and socially adequate...

**Insist, change and move forward with purpose...**

**Have purpose!**

But, as you know, **the very best ideas require a lot of sweat**. They are the result, often, of accidental mistakes, thousands of other ideas and much social interaction, **as well as continuous research work**.

In other words, **build upon and expand your unique networks developed while here at CMU and spur new ideas that will improve the life of others ...**

And, by doing so, **guarantee that all others are also ambitious and innovative**.

**Invest in future generations and help build an intergenerational movement that favors science and knowledge-based ideas that change the world.**

**Learn from the mistakes of my generation and innovate in a responsible way.**

2. Message 2: Keep learning, by being responsible, green and inclusive across all disciplines

**Understand emerging collective behaviors and our common responsibility to secure the life of future generations** in times of emerging decentralized digital networks and AI enabled innovations

The **digital world is undergoing rapid transformations and expansion** at a global scale, with new business models and new players, emerge new relationships between institutional sectors and a broad range of entrepreneurial activities.

At the same time, you all, as **citizens of the world, face increasing challenges and opportunities and your quality of life and sustainable future** is only to be secured effectively through a new generation of user-driven technology systems, that make **citizens an integral part and key stakeholders of future developments**.

**Concentrate your efforts on the need to guarantee carbon neutrality, addressing the impending climate disaster, as well as our global safety**, this being the central endeavour that **should drive technology governance in the digital age**.

This calls our attention to “**digital humanism**”<sup>1</sup>, together with rethinking potential techno-centric narratives of progress, embracing and harnessing **uncertainty**<sup>2,3</sup>. Following the great Swedish social scientist, Helga Nowotny, I urge you to abandon the fantasy of control over nature and the illusion of techno-centric dominance of digital systems and AI-enabled innovations<sup>4</sup>.

Adopt and pursue a **transdisciplinary** approach to **collective behaviors**<sup>5</sup>, so that you and all other citizens are better **responsible** in an emerging **decentralized digital age**.

**3. Message 3: Keep learning, by being human and fostering solidarity: your choice, your body, your mind with your knowledge and our common scientific understanding, guaranteeing that all others have the same opportunities to their own choices and their own bodies**

Making **your own decisions about your body is a basic human right**.

Whoever you are, wherever you live, **you have the right to make these choices without fear, violence or discrimination**.

**Acknowledge your privilege, fight oppression with ambition, knowledge and solidarity, empower the younger and less privileged.**

Recalling “The Science of Liberty”<sup>6</sup> of Timothy Ferris, **democratic governance and individual rights did not emerge from some amorphous “brew of humanistic and scientific thinking”**. Rather, **they have been strictly connected and were “sparked” by science itself**.

And science tells us to strongly connect your choices to your body and your mind.

Yet, all over the world, people are bullied, discriminated against and arrested, simply for making choices about themselves and their lives. Many women are refused contraception. Many teenagers are denied a life-saving termination. LGBTQ+ communities suffer continuous harassment.

**You all, future world leaders, educated in one of the finest world university, should ensure that every minority group is respected.**

**Be active!**

**CAMPAIGN for basic rights for all – sexual and reproductive rights, voting rights - FOR ALL.**

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1 Nussbaum, M. (1997) *Cultivating Humanity: a classical defense of reform in liberal education*, Cambridge: Harvard University Press.

2 Nowotny, H., Scott, P., and Gibbons, M. (2001) *Rethinking science: knowledge in an age of uncertainty*, Cambridge: Polity.

3 Morgan, M.G. and Henrion, M. (1990), “Uncertainty: a guide to dealing with uncertainty in quantitative risk and policy analysis”, Cambridge Univ. Press, Cambridge, New York.

4 Nowotny, H. (2021), “In AI we Trust: power, Illusion and Control of predictive algorithms”, Polity Books.

5 Bak-Coleman, J. B., Mark Alfano, Wofram Barfuss, Carl T. Bergstrom, Migue Centeno, Iain D. Couzin, Jonathan F. Donges, Mirta Galesic, Andrew S Gersick, Jennifer Jacquet, Albert B Kao, Rachel E. Moran, Pawel ROmamnczuk, Daniel I. Rubenstaein, Kaia J Tombak, Jay J Van BAvel and Elke U Weber (2021), “Stewardship of global collective behavior”, PNAS, June 21, 2021.

6 Ferris, T. (2010), “The Science of Liberty: Democracy, Reason, and the Laws of Nature”, New York, Harper/HarperCollins Publishers.

### Concluding Remarks: the opportunity to engage in learning and knowledge networks

Let me conclude by referring to Nobel Prize-winning economist Edmund Phelps<sup>7</sup>, who argued that **our societies have gained and used an enormous pool of reliable knowledge, driven by a research community that made our universities robust social institutions**, as clearly shown by Carnegie Mellon University.

**By challenging the commonplace, you will be able to promote the simple, but powerful, idea of learning.**

**Take seriously your unique opportunity to access and engage in learning networks** across all disciplines and relate to interactions between people and organisations, which influence economic development and political relationships<sup>8</sup>.

**Learn from the mistakes of my generation and innovate in a responsible way.**

Following José Saramago, the Portuguese Nobel Laureate of literature in his Nobel speech, “[...] Let us common citizens therefore speak up. With the same vehemence as when we demanded our rights, let us demand responsibility over our duties. Perhaps the world could turn a little better. [...]”

Master and PhD classes of 2020, 2021 and 2022, we are here because we trust you and your generation. Again, **acknowledge your privilege and learn from past generation's mistakes to do better. Be bolder, be kinder, be more responsible!**

**Move forward!**

I sincerely appreciate all your attention.

Manuel Heitor

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<sup>7</sup> Phelps, E. (2013); “Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, and Change”, New York, Princeton University Press.

<sup>8</sup>Hidalgo, C.A. and Hausmann, R. (2009), ‘The building blocks of economic complexity’, Proceedings of the National Academy of Sciences of the United States of America, vol. 106, no. 26, pp. 10570-10575.