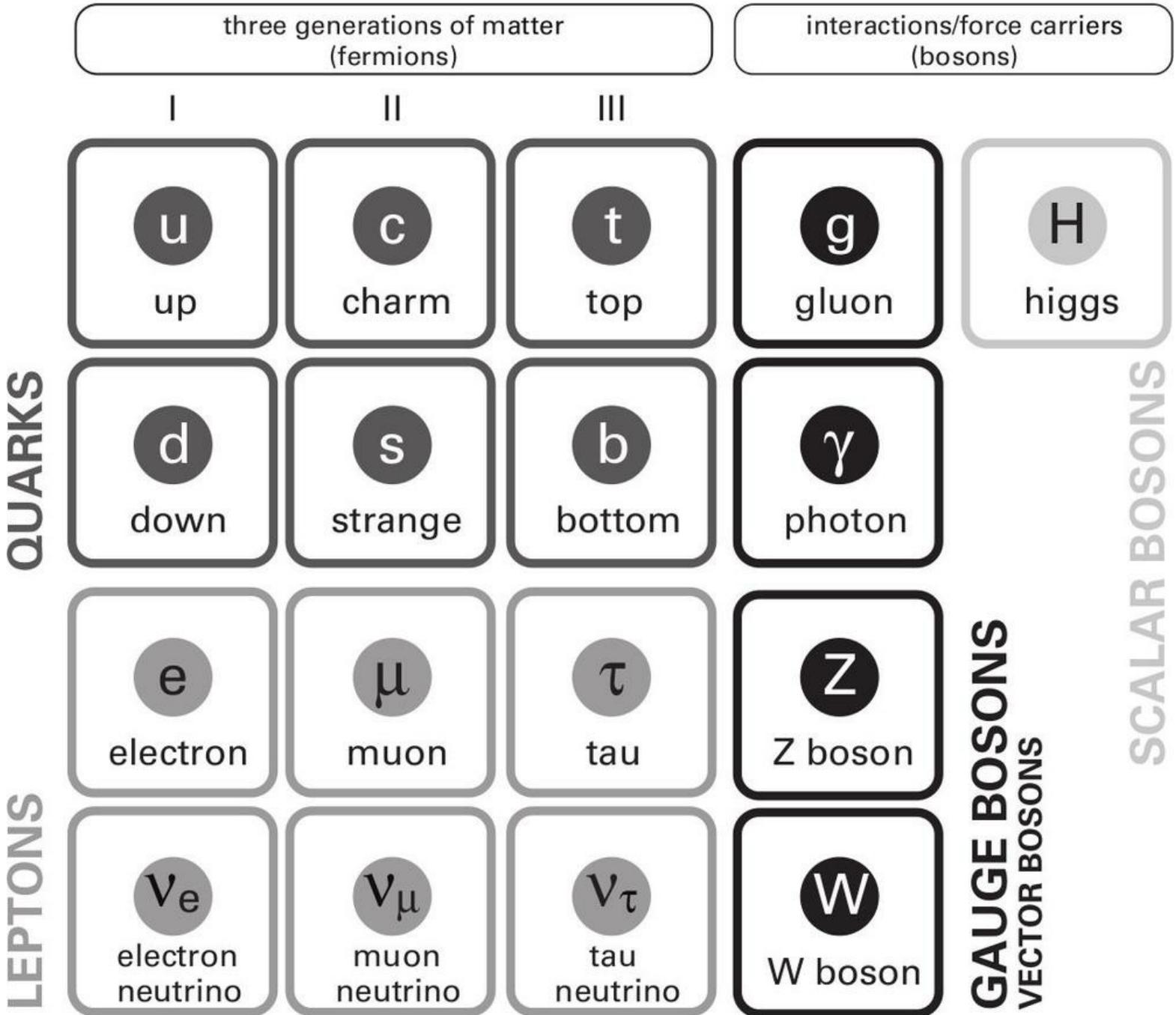


# APPENDIX

## Standard Model of Elementary Particles



Adapted from an image released by Fermilab, Office of Science, United States Department of Energy, Particle Data Group

# FURTHER READING

## **Chapter 1: Things ain't what they seem to be**

*Ignorance*, Stuart Firestein (OUP, 2012) – explores the way that ignorance drives scientific discovery.

*The Reality Frame*, Brian Clegg (Icon Books, 2017) – explores relativity and our relationship to the universe.

## **Chapter 2: Exploring the universe**

*Astroquizzical*, Jillian Scudder (Icon, 2018) – a good basic introduction to the universe.

*Gravitational Waves*, Brian Clegg (Icon, 2018) – entry in the Hot Science series covering the discovery of gravitational waves and how they might be used to find out more about the universe.

## **Chapter 3: The matter of missing matter**

*Cosmic Impact*, Andrew May (Icon, 2019) – entry in the Hot Science series dealing with impacts of asteroids and comets on the Earth, including that associated with the extinction of the dinosaurs.

*Dark Matter and the Dinosaurs*, Lisa Randall (The Bodley Head, 2015) – a detailed exploration of the possible link between dark matter and the extinction of the dinosaurs from the theory's proponent.

## **Chapter 4: How big is the universe?**

*Astrophysics for People in a Hurry*, Neil deGrasse Tyson (Norton, 2017) – a friendly approach to astronomy and cosmology.

*Before the Big Bang*, Brian Clegg (St Martin's Griffin, 2011) – explores the big bang and the theories of what might have come before.

*The Beginning and the End of Everything*, Paul Parsons (Michael O'Mara Books, 2018) – a good overview of current ideas on cosmology.

## **Chapter 5: Getting bigger faster**

*The 4-Percent Universe*, Richard Panek (Oneworld Publications, 2012) – considerable detail on the individuals involved in the search for dark matter and dark energy, though already a little out of date.

*The Cosmic Web*, J. Richard Gott (Princeton University Press, 2016) – relatively technical but approachable overview of large-scale cosmology including dark energy.

## **Chapter 6: A continuing story**

The news on dark matter and dark energy changes practically weekly – though often it's just more theories or more conflicting data. A good feel for the latest information can be obtained by searching the following websites for 'dark matter' and 'dark energy':

[www.physicsworld.com](http://www.physicsworld.com)

[www.quantamagazine.org](http://www.quantamagazine.org)

[www.sciencedaily.com](http://www.sciencedaily.com)