

Path Forward and Talk Tips

AOSC 680

Ross Salawitch

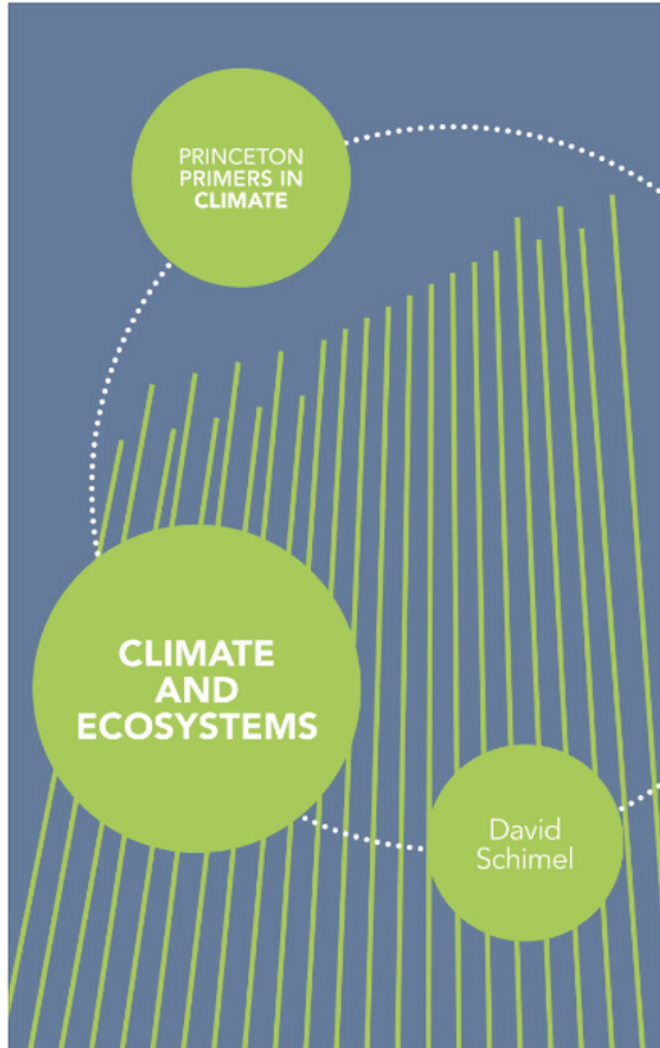
Class Web Sites:

<http://www2.atmos.umd.edu/~rjs/class/fall2022>

<https://umd.instructure.com/courses/1327017>

13 October 2022

Required Textbook: *Climate and Ecosystems*
David Schimel
Princeton Primers In Climate

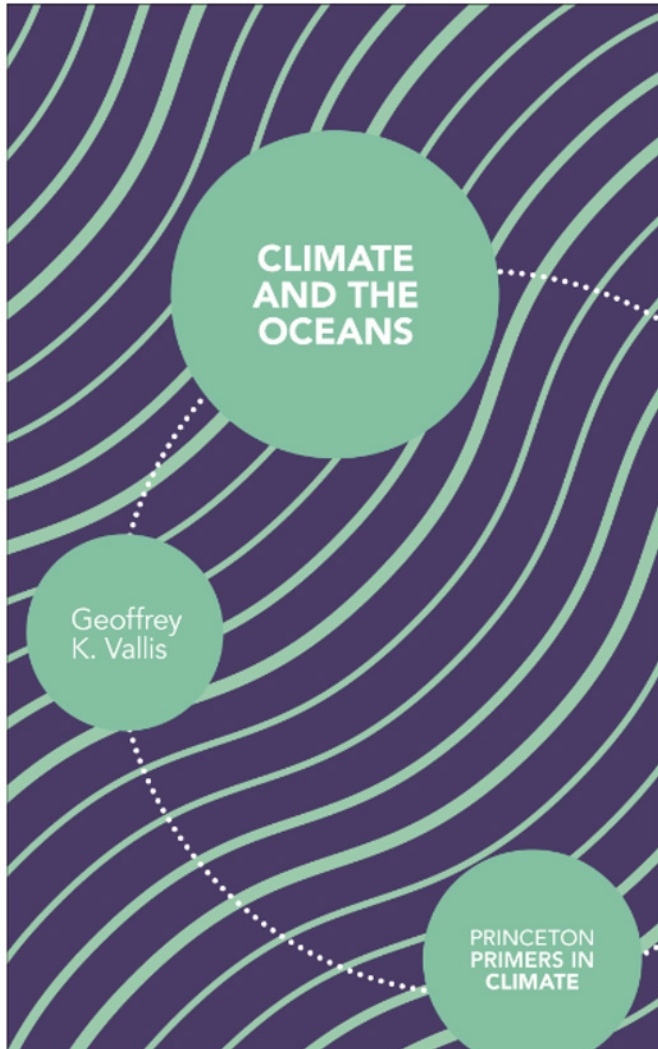


How does life on our planet respond to — and shape — climate? This question has never been more urgent than it is today, when humans are faced with the daunting task of guiding adaptation to an inexorably changing climate. This concise, accessible, and authoritative book provides an unmatched introduction to the most reliable current knowledge about the complex relationship between living things and climate.

Using an Earth System framework, David Schimel describes how organisms, communities of organisms, and the planetary biosphere itself react to and influence environmental change. While much about the biosphere and its interactions with the rest of the Earth System remains a mystery, this book explains what is known about how physical and chemical climate affect organisms, how those physical changes influence how organisms function as individuals and in communities of organisms, and ultimately how climate-triggered ecosystem changes feed back to the physical and chemical parts of the Earth System.

<https://press.princeton.edu/books/paperback/9780691151960/climate-and-ecosystems>

Required Textbook: *Climate and The Oceans*
Geoffrey Vallis
Princeton Primers In Climate



The oceans exert a vital moderating influence on the Earth's climate system. They provide inertia to the global climate, essentially acting as the pacemaker of climate variability and change, and they provide heat to high latitudes, keeping them habitable. *Climate and the Oceans* offers a short, self-contained introduction to the subject. **This illustrated primer begins by briefly describing the world's climate system and ocean circulation and goes on to explain the important ways that the oceans influence climate.** Topics covered include the oceans' effects on the seasons, heat transport between equator and pole, climate variability, and global warming. The book also features a glossary of terms, suggestions for further reading, and easy-to-follow mathematical treatments.

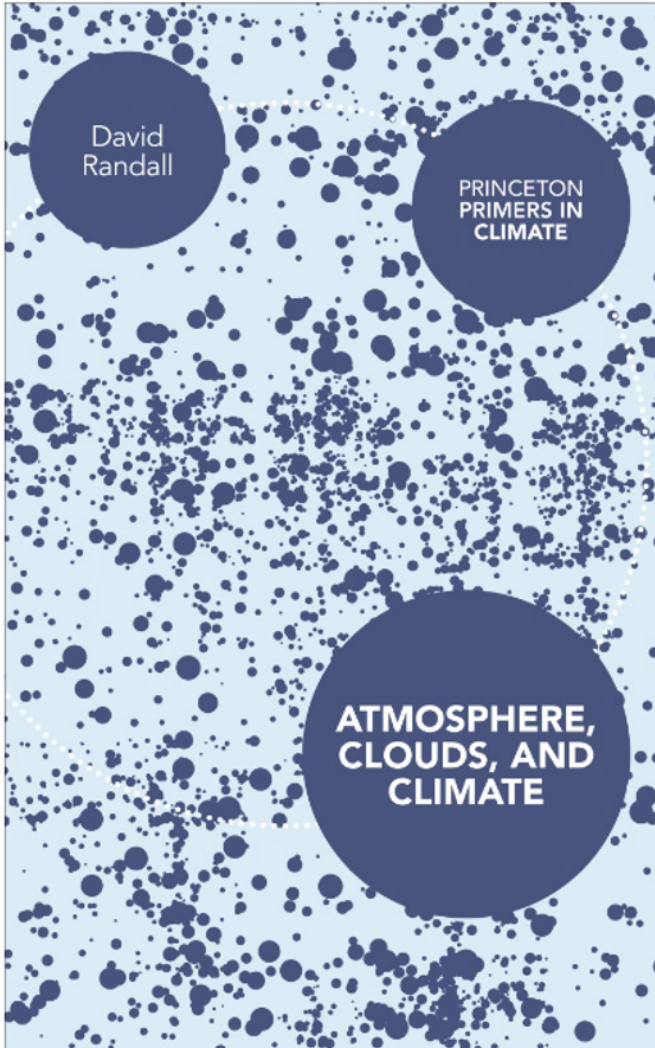
Climate and the Oceans is the first place to turn to get the essential facts about this crucial aspect of the Earth's climate system. Ideal for students and nonspecialists alike, this primer offers the most concise and up-to-date overview of the subject available.

The best primer on the oceans and climate

- Succinct and self-contained
- Accessible to students and nonspecialists
- **Serves as a bridge to more advanced material**

<https://press.princeton.edu/books/paperback/9780691150284/climate-and-the-oceans>

Required Textbook: *Atmosphere, Clouds, and Climate*
David Randall
Princeton Primers In Climate



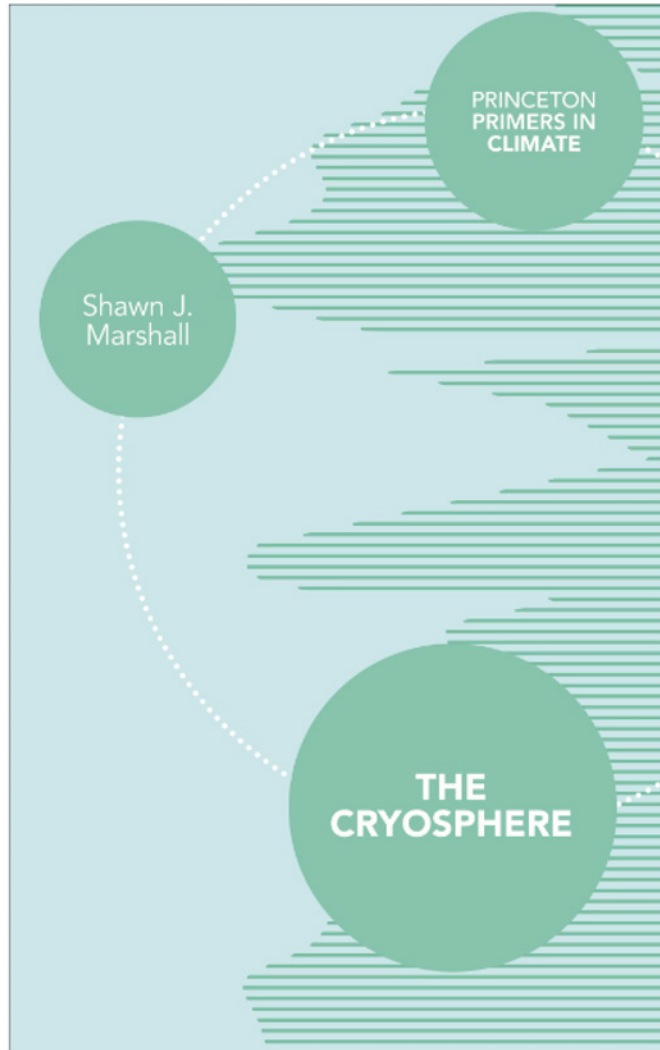
The atmosphere is critical to climate change. It can amplify shifts in the climate system, and also mitigate them. This primer offers a short, reader-friendly introduction to these atmospheric processes and how they work, written by a leading expert on the subject.

Giving readers an overview of key atmospheric processes, David Randall looks at how our climate system receives energy from the sun and sheds it by emitting infrared radiation back into space. **The atmosphere regulates these radiative energy flows and transports energy through weather systems such as thunderstorms, monsoons, hurricanes, and winter storms. Randall explains how these processes work, and also how precipitation, cloud formation, and other phase changes of water strongly influence weather and climate.** He discusses how atmospheric feedbacks affect climate change, how the large-scale atmospheric circulation works, how predicting the weather and the climate are fundamentally different challenges, and much more.

Authoritative and concise, *Atmosphere, Clouds, and Climate* features a glossary of terms, suggestions for further reading, and easy-to-follow explanations of a few key equations. This accessible primer is the essential introduction to atmospheric processes and the vital role they play in our climate system.

<https://press.princeton.edu/books/paperback/9780691143750/atmosphere-clouds-and-climate>

Required Textbook: *The Cryosphere*
Shawn Marshall
Princeton Primers In Climate



The cryosphere encompasses the Earth's snow and ice masses. It is a critical part of our planet's climate system, one that is especially at risk from climate change and global warming. *The Cryosphere* provides an essential introduction to the subject, written by one of the world's leading experts in Earth-system science.

In this primer, glaciologist Shawn Marshall introduces readers to the cryosphere and the broader role it plays in our global climate system. After giving a concise overview, he fully explains each component of the cryosphere and how it works — seasonal snow, permafrost, river and lake ice, sea ice, glaciers, ice sheets, and ice shelves. **Marshall describes how snow and ice interact with our atmosphere and oceans and how they influence climate, sea level, and ocean circulation. He looks at the cryosphere's role in past ice ages and considers the changing cryosphere's future impact on our landscape, oceans, and climate.**

Accessible and authoritative, this primer also features a glossary of key terms, suggestions for further reading, **[explanations of equations, and a discussion of open research questions in the field.](#)**

<https://press.princeton.edu/books/paperback/9780691145266/the-cryosphere>

Required Textbook: *Climate and Ecosystems*
David Schimel
Princeton Primers In Climate

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Required Textbook: *Climate and The Oceans*
Geoffrey Vallis
Princeton Primers In Climate

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Required Textbook: *Atmosphere, Clouds, and Climate*
David Randall
Princeton Primers In Climate

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Book Preferences

Book	First	Second	Third	Fourth
Atmosphere, Clouds, and Climate	6		1	1
Climate and Ecosystems		2	3	3
Climate and the Oceans	2	4	2	
The Cryosphere		2	2	4

Book Preferences

Book	First	Second	Third	Fourth
Atmosphere, Clouds, and Climate	6		1	1
Climate and Ecosystems		2	3	3
Climate and the Oceans	2	4	2	
The Cryosphere		2	2	4

Since *Atmosphere, Clouds, and Climate* is the top choice, let's start with this book and cover up to Chapter 7, since Chapters 8 & 9 are short (27 pages) and provide a terse description of broad subject matter.

If I lead a discussion of Chapters 1 and 2 next Tues (54 pages):

is there anyone who selected this book as their top choice willing to lead discussion of

Chapter 3 ("How Turbulence and Cumulus Clouds Carry Energy Forward" (48 pages) next Thursday?

Other assignments from this book would be:

Chapters 4 & 5 (55 pages; some eqns; might be better for 2nd year student to lead)

Chapters 6 & 7 (45 pages)

3 students needed

Book Preferences

Book	First	Second	Third	Fourth
Atmosphere, Clouds, and Climate	6		1	1
Climate and Ecosystems		2	3	3
Climate and the Oceans	2	4	2	
The Cryosphere		2	2	4

Since *Climate and the Oceans* is the second choice, let's follow with this book and cover the entire content.

If I lead a discussion of Chapters 1 and 2 (40 pages), the other assignments from this book would be:

Chapters 3 & 4 (64 pages; some eqns; again might be better for 2nd year student to lead; would go light on the two appendices of Chapter 3 that constitute 12 pages)

Chapters 5 & 6 (51 pages)

Chapters 7 (49 pages)

3 students needed

Book Preferences

Book	First	Second	Third	Fourth
Atmosphere, Clouds, and Climate	6		1	1
Climate and Ecosystems		2	3	3
Climate and the Oceans	2	4	2	
The Cryosphere		2	2	4

Since *Climate and Ecosystems* & *The Cryosphere* have near equal levels of support, let's proceed as follows:

If will lead a single discussion of Chapters 1 & 2 from *Climate and Ecosystems* (33 pages) as well as Chapter 1 of *The Cryosphere* (26 pages), followed by:

a) one student led discussion of approx. 50 to 60 pages from *Climate and Ecosystems*

b) one student led discussion of approx. 50 to 60 pages from *The Cryosphere*

2 students needed: ideally, we will have here students who had these books as their second choice.

Reminder

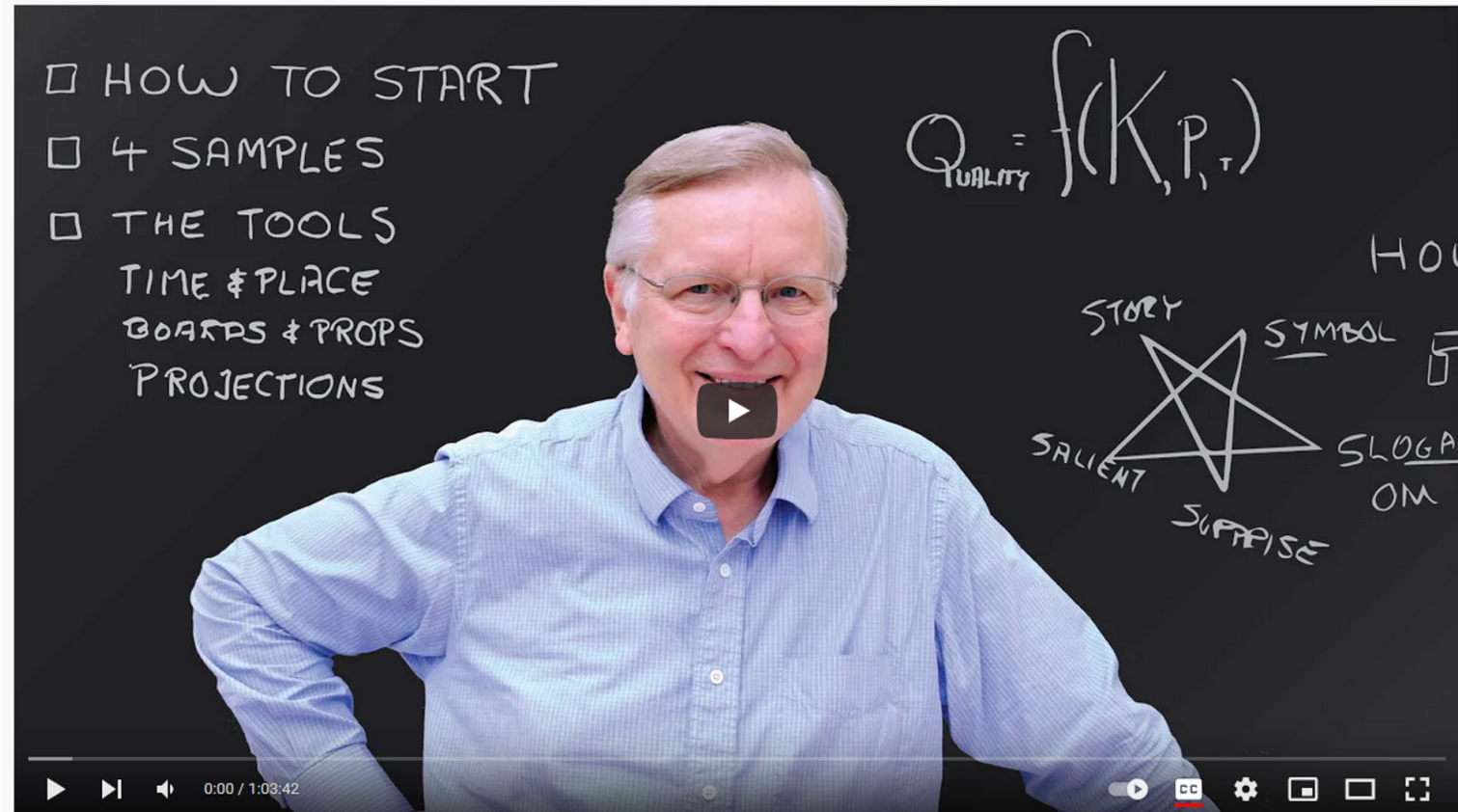
I will be “standing back” from these discussions, and making mental notes of who participates and who stays silent. Your grade on the student led presentation (20% of overall grade) will be based upon both your leadership of your presentation, and your level of participation in the discussions that others lead.

It is absolutely, positively expected everyone will have conducted the readings and will come to class prepared to discuss the material.

Tips on Giving a Good Presentation

Professor Patrick Winston, MIT

https://en.wikipedia.org/wiki/Patrick_Winston



MIT

How to Speak

13,342,623 views Dec 20, 2019 MIT How to Speak, IAP 2018

322K Dislike Share Save ...

<https://www.youtube.com/watch?v=Unzc731iCUY>

Tips on Giving a Good Presentation

Points 10  Published



Details

Questions

Question

3 pts

Describe something that surprised you from the video "How to Speak" by Patrick Winston: i.e., here I am looking for a suggestion he made for "how to give a good talk" that you did not expect to be present in the list of suggestions. The answer here can either be a suggestion he made with which you either agree or disagree, or something else that surprised you ... other than the actual surprise of him

Question

3 pts

Describe an element of the video "How to Speak" by Patrick Winston that you had not previously been part of your "plan of action" for your own talks, and now having seen the video will be a very important consideration for your future talks.

Question

4 pts

Describe an element of the video "How to Speak" by Patrick Winston that you think *may not apply* to talks you plan to give in the future, and state specifically why you think this suggestion is not appropriate for talks you will give.