

WWW.BJERKNES.UIB.NO

Bjerknes Centre for Climate Research

Writing training in the natural sciences:

Lessons from the Norwegian Research School in Climate Dynamics

Professor Tore Furevik (tore.furevik@iuh.uib.no)
Geophysical Institute and Bjerknes Centre for Climate Research, University of Bergen, Norway

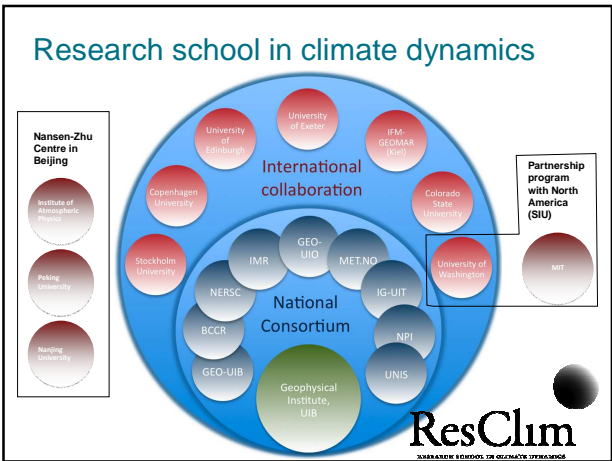
Academic writing from Bachelor to PhD, Solstrand 7 Oct 2010

Bjerknes Centre for Climate Research

- Centre of excellence, 17 MNOK / yr, 2003-2012
- Collaboration between four institutions in Bergen
- Largest climate research community in Northern Europe
- > 100 scientists, 21 countries
- Heavily involved in IPCC, runs a full Earth System model
- Strong national and international visibility
- New funding, 2010-2021

Climate challenge - Need for a new type of scientists

- Expert knowledge in depth
- Multi-disciplinary knowledge
- Networking and collaboration skills
- Communication skills
- Ability to be active in prediction, mitigation and adaptation to, climate and environmental changes
- The Norwegian research schools in climate dynamics (2009-2016)



Synopsis of PhD topics

– based on "speed collaboration" at first all staff meeting at Geilo

Key challenges seen from students

Key challenges to be faced in the upcoming 6-12 months as described by the candidates themselves

Beginner	Mid-stage	Senior
<ul style="list-style-type: none"> Define the problem and make a plan Review the relevant literature Develop practical skills (lab work, programming, etc) Attend courses, workshops and summer schools Collect data and produce results Start building a network Acquire general knowledge on conferences, funding, etc. 	<ul style="list-style-type: none"> Overview of your project: structure into papers/ thesis Be creative Prioritize your work: become more efficient Develop your writing skills: start writing your first papers Become more confident by (i) committing to what you are doing, and (ii) acknowledging the learning curve you have undergone so far Start arguing/defending your point(s) of view Maintain mental health 	<ul style="list-style-type: none"> Put things into a bigger context and be able to summarize Time management Proposal writing Job seeking -> Alumni? Stay motivated!

Key challenges seen from supervisors

Supervising PhD candidates: Priorities and challenges		
Beginner	Mid-stage	Senior
<p>Challenges</p> <p>1. Define the framework</p> <ul style="list-style-type: none"> Project description Literature list Identify main methods Identify relevant courses <p>2. Enthusiasm → motivation</p> <ul style="list-style-type: none"> Allocate time Establish supervisor-student relation Challenge the student <p>3. Communicate wishes and expectations</p> <ul style="list-style-type: none"> Encourage early scientific writing and presentation 	<p>Challenges</p> <ul style="list-style-type: none"> Devote time to the student Be enthusiastic and constructive Avoid sidetracks, limit work <p>How to keep students on track</p> <ul style="list-style-type: none"> Encourage positive thinking Encourage research visits to other institutions Encourage writing Be accessible <p>Recommendations to students</p> <ul style="list-style-type: none"> Don't hide, "lose" your supervisor Communicate results enthusiastically Start writing Be aware of acquired skills, be confident Be curious, ask questions 	<p>Challenges:</p> <ul style="list-style-type: none"> Work on the academic writing, e.g. write short and often, draft papers in working groups Clearly pose problem(s) <p>Career development</p> <ul style="list-style-type: none"> Active networking Experience research practices in other institutes Travel abroad Funding possibilities

Course on Academic writing, Runde Environmental Centre, 23-27 August

- From Bergen Monday evening and return Friday lunchtime
- Program based on feedback from students and supervisors at Geilo.



Course on Academic writing, Runde Environmental Centre, 23-27 August



Why course in academic writing?

"For all the books and papers you have read, for all the interviews, field notes or experiments you have undertaken, for all the conferences you have attended or departmental presentations you have given, at the end of it all you are assessed on what you have written"

"Writing is at the heart of a complex relationship between your personal, professional and intellectual development"

Daniel Soule in "Research Writing for Graduates"

1. Research Writing for Graduates

- Part 1: Writing Foundations**
 - Defining the academic style
 - Thinking about sentences
 - Paragraph structure
 - Reviewing and using the scholarly literature
 - Referencing strategies
 - Academic voice
- Part 2: Building a writer's toolkit**
 - Free writing
 - Summarising your research
 - Critical reading form
 - Writing a critical summary of literature exercise
 - Starting to develop your research hypothesis
 - Developing your research ideas

2. Writing a Journal Article

- Part 1: Planning to write and writing a plan
- Part 2: Writing an introduction to a journal paper
- Part 3: Writing the body of a journal article
- Part 4: In conclusion
- Part 5: Peer review
- Part 6: Writing an abstract and targeting a journal

3. Communicate to different audience

- How to extract and necessary information from a scientific paper and
 - Produce a press release
 - Produce a newspaper article
 - Produce a blog
 - Produce a twitter message
- Paper: "Modeling European winter windstorm losses in current and future climate"
- Students were particularly good at writing 'sensational' (and funny) tabloid newspaper articles

Feedback from students

- Strengths
 - *the 'practical training' with 'lots of tips and practice'*
 - *'Inspiring! Great hand-outs. Great lecturer. Now I want to go home and start writing'*
- Improvements
 - *having the opportunity to bring more of your own work*
 - *longer courses and more often, have opportunity to work on own papers between sessions*

