

Biographical Sketch

Jon Nelson

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Professional Preparation

1994	PhD	Physics	University of Washington, Seattle, Washington <i>“A Theoretical Study of Ice Crystal Growth in the Atmosphere”</i>
1989	MS	Physics	University of Illinois, Urbana-Champaign, Illinois
1985	BS	Physics, Math	University of Washington, Seattle, Washington

Appointments

2011-present	Editor	Redmond Physical Sciences
2010-2011	Staff Scientist	Nion Co.
2006 – 2010	Lecturer	College of Science and Engineering, Ritsumeikan University
1999 – 2006	Editor	Nelson Scientific
1999 – 2002	Visiting Scientist	Doshisha University
1996 – 1999	Assistant Professor	Institute of Atmospheric Physics & Department of Atmospheric Sciences, University of Arizona
1994 – 1996	Postdoctoral Researcher	National Center for Atmospheric Research (NCAR)

Awards and Grants

1997	NSF	Career Grant, University of Arizona <i>“Discovering the Underlying Mechanism of Snow Crystal Growth and Bringing Modern Laboratory Learning to Undergraduates”</i>
1994 – 1996	DOE	Distinguished Global Climate Change Postdoctoral Fellowship, National Center for Atmospheric Research
1990 – 1993	NASA	Global Climate Change Graduate Student Fellowship, University of Washington

Ten Selected Recent Peer-Reviewed Publications

Jon Nelson: *Theory of isotope fractionation on faceted ice crystals*. Atmos. Chem. Phys., **11**, 11351-11360 (2011).

<http://www.atmos-chem-phys.net/11/11351/2011/acp-11-11351-2011.pdf>

Jon Nelson: *Origin of Diversity in Falling Snow*. Atmos. Chem. Phys. **8**, 5669-5682 (2008). <http://www.atmos-chem-phys.net/8/5669/2008/acp-8-5669-2008.html>

Jon Nelson: *Branch Growth and Sidebranching in Snow Crystals*. Crystal Growth & Design **5**, 1509-1525 (2005).

<http://pubs.acs.org/cgi-bin/sample.cgi/cgdefu/2005/5/i04/pdf/cg049685v.pdf>

Jon Nelson: *Interactive Comment on 'Supersaturation, Dehydration, and Denitrification in Arctic Cirrus'*. Atmos. Chem. Phys. Discuss. **5**, S257-S260 (2005).

<http://www.atmos-chem-phys-discuss.net/5/S257/2005/acpd-5-S257-2005.pdf>

Jon Nelson and Marcia Baker: *Charging of Ice-Vapor Interfaces: Applications to Thunderstorms*. Atmos. Chem. Phys. **3**, 1237-1252 (2003).

<http://www.atmos-chem-phys.net/3/1237/2003/acp-3-1237-2003.html>

Jon Nelson: *Growth Mechanisms to Explain the Primary and Secondary Habits of Snow Crystals*. Philosophical Magazine A **81**, 2337-2373 (2001).

<http://www.redmondphysicalsciences.com/nelson2001GrowMech.pdf>

Jon Nelson and Charles Knight: *Snow Crystal Habit Changes Explained by Layer Nucleation*. J. Atmos. Sci. **55**, 1452-1465 (1998).

<http://www.redmondphysicalsciences.com/nelson-knight1998LayerNucl.pdf>

Jon Nelson: *Sublimation of Ice Crystals*. J. Atmos. Sci. **55**, 910-919 (1998).

<http://www.redmondphysicalsciences.com/nelson1998Subl.pdf>

Jon Nelson and Charles Knight: *A New Technique for Growing Crystals from the Vapor*. J. Cryst. Gr. **169**, 795-797 (1996).

<http://www.redmondphysicalsciences.com/nelson-knight1996Cap1Meth.pdf>

Jon Nelson and Marcia Baker: *New Theoretical Framework for Studies of Vapor Growth and Sublimation of Small Ice Crystals in the Atmosphere*. J. Geophys. Res. D **101**, 7033-7047 (1996).

<http://www.redmondphysicalsciences.com/nelson-baker1996TheoFram.pdf>

Synergistic Activities

Blog: <http://www.storyofsnow.com/blog1.php> A blog about observations and explanations about ice and snow-crystal formations.

Popular articles: Annual articles in *Snow Crystals* (2006-2011)
<http://snowflakebentley.com/WBnews.htm#n17>.

Children's book: Mark Cassino and Jon Nelson: *The Story of Snow*. Chronicle Books, San Francisco (2009.)

Educational posters: *The Crystal Chemistry of Snowflakes*. (for the American Chemical Society See http://acswebcontent.acs.org/journalist_resources/snowposter.pdf .
Also, *The Making of a Snow Crystal*. Educational poster about the science of snow crystals in clouds (2005).

Research device: A new crystal-growth apparatus that supports a crystal in a highly uniform and well-controlled environment with minimal influence from foreign surfaces.

Collaborators and other Affiliations

Collaborators: Brian Swanson (Laucks Foundation)

Graduate and Post-graduate supervisors: Marcia Baker (University of Washington), Charles Knight (NCAR)

Thesis Advisor: Daniel Bentz (University of Arizona, Physics)