

Jesse V. Johnson

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PROFESSIONAL PREPARATION **University of Maine, Orono.**

- Ph.D. in Physics, May 2002.
- M.S. in Computer Science, May 2003.

University of Minnesota, Twin Cities.

- B.S. in Physics, December 1993.

GRADUATE ADVISOR James L. Fastook, University of Maine

APPOINTMENTS **Professor** The University of Montana (August 2012 – Present)

Associate Professor The University of Montana (August 2007 – August 2012)

Assistant Professor The University of Montana (August 2002 – August 2007)

Research Assistant University of Maine, Orono (June 1999 – June 2002)

Field Assistant *Nathaniel B. Palmer*, Amundsen Sea, Antarctica (2001)

Teaching Assistant, University of Maine, Orono (September 1997 – May 1999)

Secondary School Teacher U.S. Peace Corps, Malawi (June 1994 – May 1996)

- ## PUBLICATIONS
- ◇ Y. Korolev, A. Yagola, D.J. Brinkerhoff, **J.V. Johnson** (2013) “Methods of error estimation in inverse problems on compact sets in banach lattices – theory and applications in ice sheet modeling” *Inverse Problems, Design and Optimization Symposium*, Albi, France, June 26-28 (*proceedings volume forthcoming*)
 - ◇ Brinkerhoff, D.J and **J.V. Johnson** (2013) “Data assimilation and prognostic whole ice-sheet modelling with the variationally derived, higher-order, open source, and fully parallel ice sheet model VarGlaS.” *The Cryosphere* MS No. tc-2013-25 *In press*
 - ◇ Bindschadler, R. A., S. Nowicki, A. Abe-Ouchi, A. Aschwanden, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, **J.V. Johnson**, C. Kroulev, A. Levermann, W. Lipsomb, M. Martin, M. Morlighem, B. Parizek, D. Pollard, S. Price, D. Ren, F. Saito, T Sato, H. Seddik, H. Seroussi, K. Takahashi, R. Walker and W. Wang, (2013) “Ice-sheet model sensitivities to environmental forcing and their use in projecting future sea-level (the SeaRISE project).” *Journal of Glaciology* Vol. 59, No.214, doi:10.3189/2013JoG12J125

- ◇ Nowicki, S., R. Bindshadler, A. Abe-Ouchi, A. Aschwanden, E. Bueler, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, **J.V. Johnson**, C. Kroulev, E. Larour, A. Levermann, W. Lipsomb, M. Martin, M. Morlighem, B. Parizek, D. Pollard, S. Price, E. Rignot, D. Ren, F. Saito, T Sato, H. Seddik, H. Seroussi, K. Takahashi, R. Walker and W. Wang (2013) “Insights into spatial sensitivities of ice mass response to environmental change from the SeaRISE ice sheet modeling project I. Antarctica” *Journal of Geophysical Research - Earth Surface* doi: 10.1002/jgrf.20081.
- ◇ Nowicki, S., R. Bindshadler, A. Abe-Ouchi, A. Aschwanden, E. Bueler, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, **J.V. Johnson**, C. Kroulev, E. Larour, A. Levermann, W. Lipsomb, M. Martin, M. Morlighem, B. Parizek, D. Pollard, S. Price, E. Rignot, D. Ren, F. Saito, T Sato, H. Seddik, H. Seroussi, K. Takahashi, R. Walker and W. Wang. (2013) “Insights into spatial sensitivities of ice mass response to environmental change from the SeaRISE ice sheet modeling project II. Greenland.” *Journal of Geophysical Research - Earth Surface* doi: 10.1002/jgrf.20076 .
- ◇ O.P. Layeni and **J.V. Johnson** (2012), “Some explicit solutions for a class of one-phase Stefan problems” *AIP Conf. Proc.* 1479, 2379, DOI:10.1063/1.4756673
- ◇ O.P. Layeni, **J.V. Johnson**, (2012) “Hybrids of the heat balance integral method”, *Applied Mathematics and Computation*, Volume 218, Issue 14, Pages 7431-7444, ISSN 0096-3003, 10.1016/j.amc.2012.01.001.
(<http://www.sciencedirect.com/science/article/pii/S0096300312000069>)
- ◇ S.P. Carter, H.A. Fricker, D.D. Blankenship, **J.V. Johnson**, W. Lipscomb, S.F. Price, D.A. Young, (2011) “Modeling five years of subglacial lake activity in the MacAyeal Ice Stream catchment through assimilation of ICESat laser altimetry” *Journal of Glaciology*, vol. 57 (206) pp. 1098-1112
- ◇ D.J. Brinkerhoff, T.W. Meierbachtol, **J.V. Johnson**, J.T. Harper, (2011) “Sensitivity of the frozen-melted basal boundary to perturbations of basal traction and geothermal heat flux: Isunnguata Sermia, western Greenland”, *Annals of Glaciology*, 52(59) pp. 42-50
- ◇ R. Calov, R. Greve, A. Abe-Ouchi, E. Bueler, P. Huybrechts, **J.V. Johnson**, F. Pattyn, D. Pollard, C. Ritz, F. Saito, L. Tarasov (2010) Results from the Ice-Sheet Model Intercomparison Project Heinrich Event INtercOmparison (ISMIP HEINO). *Journal of Glaciology* vol. 56 (197) pp. 371-383
- ◇ S. E. Morales, T.F. Cosart, **J.V. Johnson**, W.E. Holben (2009) “Extensive Phylogenetic Analysis of a Soil Bacterial Community Illustrates Extreme Taxon Evenness and the Effects of Amplicon Length, Degree of Coverage, and DNA Fractionation on Classification and Ecological Parameters.” *Appl Environ Microb* 75(3) 668-675
- W. Lipscomb, R. Bindshadler, E. Bueler, D. Holland, **J. Johnson**, S. Price, (2009) “A Community Ice Sheet Model for Sea Level Prediction.” *Eos Trans.* 90(3) doi:10.1029/2009EO0300042009
- ◇ S. E. Morales, T.F. Cosart, **J.V. Johnson**, W. E. Holben (2008) “Supplemental programs for enhanced recovery of data from the DOTUR application.” *J Microbiol Meth* vol. 75 (3) 572-575
- ◇ A. R. Lewis, D. R. Marchant, A. C. Ashworth, L. Hedenäs, S. R. Hemming, **J.V. Johnson**, M. J. Leng, M. L. Machlus, A. E. Newton, J. I. Raine, J. K. Willenbring, M. Williams, A. P. Wolfe (2008) “Mid-Miocene cooling and the extinction of tundra in continental Antarctica”, *PNAS* 105:10676-10680; 2008, doi:10.1073/pnas.0802501105

- ◇ Pattyn, F., Perichon, L., Aschwanden, A., Breuer, B., de Smedt, B., Gagliardini, O., Gudmundsson, G. H., Hindmarsh, R. C. A., Hubbard, A., **Johnson, J.V.**, Kleiner, T., Konovalov, Y., Martin, C., Payne, A. J., Pollard, D., Price, S., Rckamp, M., Saito, F., Souek, O., Sugiyama, S., and Zwinger, T. (2008) “Benchmark experiments for higher-order and full-Stokes ice sheet models (ISMIPHOM)”, *The Cryosphere*, 2, 95-108, 2008
- ◇ C. Little, S. Jacobs, **J.V. Johnson**, A. J. Payne, R. Hallberg, C. L. Hulbe, H. Levy, G. A. Schmidt, M. Winton, V. Balaji, T. L. Delworth, D. G. Vaughan, W. H. Lipscomb, G. K. C. Clarke, S. J. Marshall, R. B. Alley, D. M. Holland, R. J. Stouffer, M. Oppenheimer, B. R. Parizek (2007), “Toward a New Generation of Ice Sheet Models”, *Eos Trans.* 88(52), 578, 10.1029/2007EO520002.
- ◇ **J.V. Johnson** and J.W. Staiger (2007), “Modeling Long-term Stability of the Ferrar Glacier, East Antarctica: Implications for Interpreting Cosmogenic Nuclide Inheritance”, *Journal of Geophysical Research*, 112, F03S30 doi:10.1029/2006JF000599
- ◇ SKB, 2006: Climate and climate related issues for the safety assessment SR-Can. SKB TR-06-23, Swedish Nuclear Waste Management Company. 186 pp.
- ◇ Staiger, J.W., Gosse, J.C., Little, E.C., Utting, D.J., Finkel, R., **Johnson, J.V.**, Fastook, J. (2006) “Glacial Erosion and Sediment Dispersion from Detrital Cosmogenic Nuclide Analyses of Till” *Quaternary Geochronology* 1(1): 29-42
- ◇ J. W. Staiger, J. C. Gosse, R. Toracinta, R. Oglesby, J. L. Fastook, **J.V. Johnson** (2006) “Atmospheric scaling of cosmogenic nuclide production: the climate effect.”, *Journal of Geophysical Research* 112(B2), B02205 doi: 10.1029/2005JB003811
- ◇ Staiger, J.W., Gosse J.C, **Johnson, J.V.**, Fastook J., Gray J.T., Stockli D.F., Stockli L., and Finkel R. “Relief generation by polythermal glacier ice” *Earth Surface Processes and Landforms* (2005) 30 (9): 1145-1159
- ◇ Staiger, J.W., Marchant, D.R., Oberholzer, P., Schaefer, J.M., **Johnson, J.V.**, Lewis, A.R. “Late Miocene-Pleistocene history of Ferrar Glacier, Antarctica: Implications for climate and ice sheet stability”, *Earth and Planetary Science Letters* (2005) 243 (3-4): 489–503
- ◇ **Johnson, J.V.**, Prescott P.R. and Hughes T.H. “Ice dynamics preceding catastrophic disintegration of the floating part of Jababshavn Isbræ”, *Journal of Glaciology* (2004) 50 (171): 492-504
- ◇ Naslund, J.O., P. Jansson, J.L. Fastook, and **J. Johnson**, (2004) “Modeling ice-sheet basal meltwater production using realistic geothermal heat flow data”, *Annals of Glaciology* (**40**) 047
- ◇ **Johnson, J.V.** and Fastook, J.L. (2002) “Northern Hemisphere glaciation and its sensitivity to basal melt water.” *Quaternary International.* (**95**), 65-74

PRESENTATIONS **J.V. Johnson**, D.J. Brinkerhoff, K. Sack, S. Nowicki “Mass conserving calculation of glacial bed elevation”, Land Ice Working Group Session, Winter meeting, 14 February, 2013

J.V. Johnson, D.J. Brinkerhoff, K. Sack “Estimation and Propagation of errors in ice sheet bed elevation measurements”, American Geophysical Union Meeting, San Francisco CA, December 2012

J.V. Johnson, M. Oswald, D.J. Brinkerhoff, J. Harper “Using surface velocity observations to infer the parameters in a basal hydrology model”, International Glaciological Society Nordic Branch Meeting, Stockholm Sweden, 25-27 October, 2012

J.V. Johnson “Drawing conclusions from inverse ice sheet modeling of the GAP field site”, Greenland Analog Project annual meeting, Stockholm Sweden, 23 October, 2013

- J.V. Johnson** “Use and implementation of adjoint methods in ice-sheet models”, April 2010, University of Stellenbosch, Mechanical Engineering mini-Conference
- J.V. Johnson** “How ice-sheets are responding to changes in ocean ”, December 2009, University of Cape Town, Oceanography Seminar
- J.V. Johnson** “Mathematical basis and open problems in the modeling of ice-sheets”, October 2009, University of Cape Town, Mechanical Engineering Seminar
- J.V. Johnson** “GAP year two ice sheet modeling objectives”, Greenland Analog Project annual meeting, Toronto Canada, 8 November, 2010
- J.V. Johnson**, D.J. Brinkerhoff, T. Meierbachtol, J. Harper, J. Utke “Use and implementation of adjoint methods in ice sheet models”, Land Ice Working Group Session, 15th annual CCSM Workshop, 30 June, 2010
- J.V. Johnson**, T. Bocek, B. Hand, G. Granzow, “The best of prophets of the future is the past. Or is it the present?”, American Geophysical Union Meeting, San Francisco CA, December 2009,
- J.V. Johnson** “Methods and tools for ice sheet modeling with a focus on the role of hydrologic processes”, Greenland Analog Project annual meeting, Stockholm Sweden, 16 November, 2009
- J.V. Johnson** and D.J. Brinkerhoff, “Metrics for assessing ice-sheet model performance”, Land Ice Working Group Winter Meeting, Boulder CO, 17 February, 2010
- Tim Bocek and **J.V. Johnson**, *Invited Speakers* “Development of the Community Ice Sheet Model (CISM)”, Land Ice Working Group Session, 14th annual CCSM Workshop, 17 June, 2009
- J.V. Johnson**, *Invited Speaker* “Software Design Issues for Ice Sheet Models”, Los Alamos National Laboratory, Workshop on Ice Sheet Modeling, 18-20 August, 2008
- J.V. Johnson**, *Invited Speaker* “Numerics Straw Man” workshop on improving Ice Sheet Models, St. Petersburg Russia, 5-7 July, 2008
- J.V. Johnson**, *Invited Speaker* “Ice Sheet Models: Physical Basis, Numerical Treatments and Software Developments”: 8th Annual Center for Atmosphere Ocean Science (CAOS) workshop, New York University, 22-23 February, 2008.
- J.V. Johnson**, Jens-Ove Näslund, Frank Pattyn, Peter Jansson: “High Resolution Heat Flux Data – Implications for Ice Sheet Dynamics and Model Uncertainty”, American Geophysical Union Meeting, San Francisco CA, December 2007
- R. Calov and **ISMIP-HEINO participants**, “First Results of the ISMIP-HEINO Model Intercomparison Project ” European Geosciences Union Conference, Milan Italy, Spring 2007 Conference ; *Geophysical Research Abstracts*, **(9)**, 02910
- ◇ F. Pattyn and **ISMIP-HOM participants**, “ISMIP-HOM: Results of the Higher-Order Ice Sheet Model Intercomparison exercise” European Geosciences Union Conference, Milan Italy, April 2007; *Geophysical Research Abstracts*, **(9)**, 01351
 - ◇ **J.V. Johnson**, “IPY, The Next Generation: A Community Ice Sheet Model for scientists and educators, with demonstration experiments in the Amundsen Sea Embayment region”, WAIS Meeting, Stirling VA, September 2006
 - ◇ **J.V. Johnson** and Ted Cosart “Allometric Scaling in Minimum Energy Dissipation and Minimal Material Type Transportation Networks” Dynamics of Complex Systems: Common Threads, Fairbanks AK, June 2007

- ◇ **J.V. Johnson** and Ted Cosart “Allometric Scaling in Minimum Energy Dissipation and Minimal Material Type Transportation Networks” National Academy of Sciences, Kavli Frontiers of Science Symposium, Arnold and Mabel Beckman Center - Irvine, California, November 2006
- ◇ **J.V. Johnson** “Towards a Community Ice Sheet Model”, Princeton Geophysical Fluid Dynamics Laboratory (GFDL) Ice Sheet Modeling Workshop, January 2007
- ◇ **J.V. Johnson** “Developing a Community Ice Sheet Model for the International Polar Year”, National Academy of Science, Polar Review Board Meeting, Keck Center, Washington D.C., November 2006
- ◇ **J.V. Johnson** “A Dynamic View of Subglacial Lakes in a Glaciation/Deglaciation Cycle”, American Geophysical Union Meeting, San Francisco CA, December 2005
- ◇ Jared Rapp and **J.V. Johnson** “The use of a Discrete Element Model for Granular Materials to Investigate ice Shelf Formation and Break up in Jakobshavn Isbræ”, American Geophysical Union Meeting, San Francisco CA, December 2005
- ◇ Staiger, J.W., Marchant, D.R., **Johnson, J.V.**, Oberholzer, P. “Late Miocene-Pleistocene Stability of upper Ferrar Glacier, Dry Valleys, Antarctica”, American Geophysical Union Meeting, San Francisco CA, December 2005
- ◇ **J.V. Johnson** “Proposed Amundsen Sea Embayment Modeling Activities for the International Polar Year”, West Antarctica Ice Sheet Meeting, Stirling VA. September 2005
- ◇ S. De Brabander, F. Pattyn, **J.V. Johnson**, J. Näslund (2005) “Influence of geothermal heat variability on enhanced flow and onset of West Antarctic ice streams”, *Geophysical Research Abstracts*, (7), 07690
- ◇ **J.V. Johnson** “Use of Data Compression to Measure Relative Entropy of Strings: Applications to Paleo-Climature Records”, Northwest Glaciology Meeting, Seattle WA September 2004
- ◇ **J.V. Johnson** “Allometric Scaling in Ice Sheets and Ice Streams”, Northwest Glaciology Meeting, Seattle WA, September 2004 Jeremy Mason and J. Johnson
- ◇ **J.V. Johnson** “Estimating Basal Melt Rate in Antarctica”, International Symposium on Ice and Water Interactions: Processes across the phase boundary, Portland, OR July 2004.
- ◇ **J.V. Johnson** “Jamming in Granular Materials and Till Deformation” Presentation, West Antarctic Ice Sheet Initiative Meeting, Washington D.C., September 2003.
- ◇ **J.V. Johnson** and Alex Petkov “Application of a basal water model to an embedded model for Atlantic Canada Glaciation”, CANadian QUaternary Meeting (CANQUA), June 2003, Halifax Nova Scotia
- ◇ **J.V. Johnson** “An Erosional Model for Till” Presentation, Midwest Glaciology Meeting, Orono ME, March 2003
- ◇ John Gosse and **J.V. Johnson** “Climate influence on atmospheric scaling of cosmogenic nuclide production in rocks”, Geological Society of America Meeting, Northeast Section, March 2003
- ◇ **J.V. Johnson** “Application of a Hydrologic Runoff Model to the West Antarctic Ice sheet.” Presentation, West Antarctic Ice Sheet Initiative Meeting, Washington D.C., September 2002.

- ◇ **J.V. Johnson** and James Fastook “Lake Instability Mechanism for Fast Glacier Flow.”, International Society of Glaciology Meeting on fast flow of glaciers, Yakutat, AK, June 2002.
- ◇ **J.V. Johnson** “The Positions of Ice Streams in Atlantic Canada During the Last Glaciation as Determined by a Basal Hydraulic Model for Ice Sheets.” Presentation, Atlantic Canada Ice Dynamics (ACID) Workshop. Halifax, Nova Scotia, June 2002.
- ◇ **J.V. Johnson** “Lake Instability Mechanism for Fast Glacier Flow”. Poster, Inland Northwest Research Alliance Conference, Boise, Idaho, October 2002.

HONORS

- 2013 Awarded full professor, University of Montana
- 2003–2013 4 faculty merit awards
- 2006 Kavli Frontiers of Science Conference participant
- 2007 Awarded tenure, University of Montana
- 2002–2010 Ad Hoc and panelist reviewer for NSF and NASA
- 2002–2010 Director, Montana State Science Fair

SYNERGISTIC
ACTIVITIES

- ◇ 2009– Co-Chair of Land Ice Working Group of the Community Climate Systems Model
- ◇ 2010–2011 Faculty exchange, University of Cape Town, South Africa
- ◇ Organizer of ice sheet modeling summer modeling school
- ◇ Co-investigator on multi-disciplinary NSF IGERT proposal to research mathematical dimensions of the ecology of infectious disease.
- ◇ Howard Hughes Medical Institute grant co-investigator. This grant supports integration of infectious disease material from the IGERT program into undergraduate research and course work.
- ◇ Montana State Science Fair director, responsible for coordination of state fair. Active advisor on several student projects.
- ◇ Graduate Advisor or committee member to students in to Computer Science, Forestry, Chemistry, Mathematics, and Physics.

COLLABORATORS

- ◇ Joel Harper, *University of Montana*
- ◇ Stephen Price *Los Alamos National Laboratories*
- ◇ William Lipscomb *Los Alamos National Laboratories*
- ◇ Beatha Csatho *University of Buffalo*
- ◇ Cornelius J. van der Veen *University of Kansas*
- ◇ Leigh Stearns *University of Kansas*
- ◇ Frank Pattyn, *Université Libre de Bruxelles*
- ◇ Jane Willenbring, *Pennsylvania State University*
- ◇ Adam Lewis, *North Dakota State University*
- ◇ Christina Hulbe, *University of Otago*
- ◇ Peter Jansson, *University of Stockholm, Sweden*

COURSES
TAUGHT

- ◇ Directed Learning in Computer Science: a Massive, Open, Online Course (MOOC) Hybrid
- ◇ Introduction to Python Programming for Scientists

- ◇ C++ Programming for Engineers
- ◇ Introduction to the Finite Element Method
- ◇ Statistical, Dynamical, and Computational Modeling
- ◇ Computer Simulation and Modeling
- ◇ Programming Languages
- ◇ Data Structures
- ◇ Computer Architectures
- ◇ Computer Graphics
- ◇ Scientific Visualization
- ◇ Introduction to Computer Science

STUDENTS
ADVISED

Jeremy Sauer: Computer Science Masters Completed May 2005–“Geostrophic Vorticity Equation with Finite Element and Spectral Methods: A Comparison”

Alex Petkov: Computer Science Masters Completed May 2005– “Transparent Line Integral Convolution Method in OpenDX”

Jeremy Mason: Computer Science Masters Completed May 2005– “Channel Networks in Ice”

Jared Rapp: Computer Science Masters Completed May 2006– “A Discrete Element Model for Ice Flow in Jakobshavns Isbræ”.

Ted Cosart: Computer Science Masters Completed May 2006– “Optimal Channel Networks measured with Allometry and Optimized with Simulated Annealing”.

Tong Xianping: Computer Science Masters, Completed December 2006 – “An Ordinary Differential Equations Approach to Modeling Methadone Levels”

Russ Parsons: Forestry Ph.D., Completed December 2007 –“Quantitative Basis For Evaluation Of Fuels Treatments In Heterogeneous Fuels in Douglas-Fir Forests With Simulation Modeling”

James Fishbaugh: Computer Science Masters, Completed May 2007 – “Development of a Higher-Order Ice Sheet Model with a Rescaled Coordinate System”

Timothy Bocek : Computer Science Masters, Completed August 2009 – “Integrating Higher Order Physics in the Community Ice Sheet Model: Scientific and Software Concerns”

Brian Hand: Computer Science Masters, Completed August 2009 – “Model Initialization Process for Antarctic and Greenland Ice Sheets with Extensions to 100 Year Predictions”

Timothy Wylie: Computer Science Masters, Completed May 2010 – “Integration of an HP-adaptive finite element analysis library into the community ice sheet model”

Stephen Garcia: Computer Science Masters, Completed May 2011 – “Real-time smoothed particle hydrodynamics with the CUDA platform”

Ted Cosart: Interdisciplinary Ph.D. Completed June 2013– “Evaluation of a new method for large-scale and grmr targeted next generation DNA sequencing in nonmodel species”.

GRANTS
AWARDED

- ◇ “Land Unknown: Assessing Data Requirements for Modeling Change in the Antarctic Ice Sheet with an Emphasis on the Subglacial Bed” Co-Is: Charles Jackson and **J.V. Johnson**, awarded June 2013, \$565,480 total funding, U. Montana Share **NSF \$289,181** over 3 years,

- ◇ “Partitioning ice sheet surface elevation changes into dynamic, surface mass balance, and firn components” PI: **J.V. Johnson** awarded May 2013, **NASA \$20,045** over one semester
- ◇ “Beyond Backstress: data driven assessment of outlet glacier dynamics” PI: Leigh Stearns (KU) Co-Is: C.J. Vander Veen **J.V. Johnson**, B. Csatho, awarded July 2011, \$826,301 total funding, U. Montana Share **NASA \$226,900** over 3 years,
- ◇ “Enhancement of NASAs Polar Research Missions: Adjoint Data Assimilation Into Numerical Models To Reveal Physical Properties Of The Greenland Ice Sheet” NASA EPSCoR, Co-Is **J.V. Johnson** and J. Harper, awarded August 2011, **NASA \$1.08 million, plus \$500,000 from state in match** over 3 years,
- ◇ MSU Space Grant Fellowship for advisee Douglas Brinkerhoff (2011), **NASA \$11,000**, one semester,
- ◇ MSU Space Grant Fellowship for advisee Douglas Brinkerhoff (2010-2011), **NASA \$22,000**, one year,
- ◇ 2010-2011 UM Exchange program award for **J.V. Johnson** to South Africa, **UM Exchange \$25,000**, one year,
- ◇ “Collaborations in Mathematics and Geosciences: Enabling ice sheet sensitivity and stability analysis with a large-scale higher-order ice sheet model’s adjoint to support sea level change assessment” PI Jesse Johnson, awarded in 2009; **NSF \$184,000**, over 3 years,
- ◇ “Collaborative Research: Greenland Ice Sheet Basal Hydrology and Sliding Dynamics - The Proof of the Drill” NSF, PI Joel Harper, Co-Is T. Pfeffer, **J.V. Johnson**, N. Humphry; awarded in 2009 **NSF \$475,000** over 4 years,
- ◇ “GAP, the Greenland Analog Project” SKB (Swedish Nuclear Waste Management Company), PI Joel Harper, Co-I **J.V. Johnson** awarded in 2009; **SKB \$289,314** over 3 years,
- ◇ “Data preparation and simulation studies in support of seaRISE efforts” NASA, PI: **J.V. Johnson**, awarded in 2009; **NASA \$119,883** over 1 year,
- ◇ “Collaborative Research: IPY, The Next Generation: A Community Ice Sheet Model for scientists and educators” PI: **J.V. Johnson**, CO-I J. Henry plus partners at 4 other institutions, awarded in 2007; **NSF \$315,000** over 2 years,
- ◇ Howard Hughes Medical Institute Award, PI Bill Holben, Co-Is J. Graham, **J.V. Johnson**; awarded in 2005 **HHMI \$1.5 million** over 4 years,
- ◇ Montana Ecology of Infectious Disease, NSF IGERT, PI W. Holben, Co-Is **J.V. Johnson**, C. Bruener, G. Luikadt, J. Bardsley, awarded in 2005; **NSF \$3,260,729** over 5 years, and
- ◇ Hewlett Packard Educational Technology Grant Grant PI J. Herny, co-I Y. Riemer, **J.V. Johnson**, Awarded in 2003; **HP \$15,500 cash plus \$58,000 dollars of equipment** over one year.