

Biographical Sketch for Morten Hjorth-Jensen

Education and Training:

Institution	Major/Title	Degree	Date
Norwegian University of Science and Technology, Trondheim, Norway	Physics	MSc	1983-1988
University of Oslo, Norway	Physics	PhD	1988-1993
ECT*, Trento, Italy	Postdoctoral Researcher		1994-1996
Nordita, Copenhagen, Denmark	Postdoctoral Researcher		1996-1998

Professional positions:

Position	Institution	Date
Associate Professor of Physics	University of Oslo, Norway	1999-2001
Professor of Physics	University of Oslo, Norway	2001-present
Adjunct Professor	Michigan State University/NSCL	2003-2011
Professor of Physics	Michigan State University/NSCL	2012-present
Principal investigator	Center of Mathematics for Applications, University of Oslo	2003-2013
Principal investigator	Center for Computing in Science Education, University of Oslo	2016-present

Awards and Recognitions:

Award	Date
University of Oslo award for excellence in teaching	2000
Fellow of the American Physical Society	2007
Oak Ridge National Laboratory excellence in research award	2008
Outstanding referee award of the American Physical Society	2008
University of Oslo award for excellence in teaching	2011
NOKUT (National award, Norway) award for excellence in teaching	2012
Elected member of the Norwegian Academy of Sciences and Letters	2013
Elected member of the Royal Norwegian Society of Sciences and Letters	2015
University of Oslo award for excellence in teaching for developing the Computational Physics group	2015
Olav Thon Foundation National prize for excellence in teaching award (National, Norway)	2018

Publications: 147 total refereed publications; h-index = 47 (Web of Science/Publons <https://publons.com/researcher/1751939/morten-hjorth-jensen/>). Ten publications relevant for the present proposal

1. M. Hjorth-Jensen, M. P. Lombardo, and U. van Kolck (Editors), *An Advanced Course in Computational Nuclear Physics; Bridging the Scales from Quarks to Neutron Stars*, Lecture Notes in Physics **936**, 2017
2. G. Hagen, A. Ekström, C. Forssén, G. R. Jansen, W. Nazarewicz, T. Papenbrock, K. A. Wendt, S. Bacca, N. Barnea, B. Carlsson, C. Drischler, K. Hebeler, M. Hjorth-Jensen, M. Miorelli, G. Orlandini, A. Schwenk, and J. Simonis, *Charge, neutron, and weak size of the atomic nucleus*, Nature Physics **12**, 186 (2016).
3. A. Ekström, G. R. Jansen, K. A. Wendt, G. Hagen, T. Papenbrock, B. D. Carlsson, C. Forssén, M. Hjorth-Jensen, P. Navratil, W. Nazarewicz, *Accurate nuclear radii and binding energies from a chiral interaction*, Physical Review C **91**, 051301(R) (2015).
4. G. Hagen, T. Papenbrock, A. Ekstrom, G. Baardsen, S. Gandolfi, K. A. Wendt, M. Hjorth-Jensen, and C. Horowitz, *Coupled-cluster calculations of nucleonic matter*, Physical Review C **89**, 014319 (2014).
5. T. Papenbrock, G. Hagen, M. Hjorth-Jensen, and D. J. Dean, *Coupled-cluster computations of atomic nuclei*, Reports on Progress in Physics **77**, 096302 (2014).
6. A. Ekström, G. Baardsen, C. Forssén, G. Hagen, M. Hjorth-Jensen, G. Jansen, R. Machleidt, W. Nazarewicz, T. Papenbrock, J. Sarich, and S. Wild, *Optimized Chiral Nucleon-Nucleon Interaction at Next-to-Next-to-Leading Order*, Physical Review Letters **110**, 192502 (2013).
7. K. Kowalski, D. J. Dean, M. Hjorth-Jensen, T. Papenbrock, and P. Piecuch, *Coupled cluster calculations of ground and excited states of nuclei*, Physical Review Letters **92**, 132501 (2004).
8. D. J. Dean and M. Hjorth-Jensen, *Pairing in nuclear systems: from neutron stars to finite nuclei*, Reviews of Modern Physics **75**, 607 (2003).
9. H. Heiselberg and M. Hjorth-Jensen, *Phases of dense matter in neutron stars*, Physics Reports **328**, 237 (2000).

10. M. Hjorth-Jensen, T. T. S. Kuo, and E. Osnes, *Realistic effective interactions for nuclear systems*, Physics Reports **261**, 125 (1995).

In addition I have recently finalized two textbooks on Computational Physics (one introductory and one advanced) to be published in 2019 by the Institute of Physics Publishing (IOP), UK.

Synergistic Activities

1. With colleagues at Michigan State University and Oak Ridge National Laboratory we have established a long-term activity on Computational quantum mechanics with main applications to nuclear physics and solid state physics problems. This research activity includes development of many-body theories, quantum mechanical many-body algorithms and high-performance computing activities.
2. With colleagues from the USA and other European countries, we started the Nuclear Talent initiative in 2010, see www.nucleartalent.org, where the main aim is provide an advanced and comprehensive training to graduate students and young researchers in low-energy nuclear theory. The network aims at developing a broad curriculum that will provide the platform for a cutting-edge theory for understanding nuclei and nuclear reactions. The Nuclear Talent initiative has been highly welcomed by the Nuclear Physics community. In the period 2012-2019 we have organized 17 advanced courses. We have had almost 40 applicants per course on average. I have developed and taught four of the courses and been an organizer at two other courses.
3. Since 1999 I have established an activity in computational physics at the Department of Physics at the University of Oslo. In 2015 this activity was rewarded with the University of Oslo award on excellency in teaching. I have also started from scratch and developed several courses on computational physics and many-body physics, courses I teach both at Michigan State University and at the University of Oslo. My research deals with various many-body methods and their computational aspects, with an emphasis on applications to the nuclear many-body problem.
4. With colleagues at the University of Oslo, I have been strongly involved in revising the way we teach our science courses by including computations in physics and mathematics course from the first semester of studies. This project is called 'Computing in Science Education' and has received considerable support from the University of Oslo and the Norwegian Ministry of research and education. This activity was newly awarded as a Norwegian Center of Excellency in Education. The newly established Center of Computing in Science Education has also strong links with Michigan State University and Professor Danny Caballero, whom I collaborate with on similar projects.

Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers: Collaborators and Co-editors

I collaborate with Scott Bogner, Alex Brown, Heiko Hergert, Witek Nazarewicz and Andrea Shindler at Michigan State University, David Dean, Gaute Hagen, Gustav Jansen, Sam Novario and Thomas Papenbrock at University of Tennessee and Oak Ridge National Laboratory, Wick Haxton at Berkeley, Mihai Horoi at Central Michigan University, Ubirajara van Kolck at University of Arizona, Maria Paola Lombardo at INFN, Frascati, Italy, Christian Forssen and Andreas Ekström at Chalmers, Sweden, Carlo Barbieri at Surrey, UK, Francesco Pederiva at University of Trento, Takaharu Otsuka, Naofumi Tsunoda and Kazuo Takayanagi at Tokyo University, Japan, and Artur Polls at the University of Barcelona, Spain. On Computing in Science education I collaborate with Professor Danny Caballero at Michigan State University.

Graduate and Postdoctoral Advisors Eivind Osnes (University of Oslo (UiO), Norway, PhD advisor), Ben Mottelson (ECT*, postdoctoral advisor)

Thesis Advisor and Postgraduate-Scholar Sponsor (2014-2019) *Graduate and Post-doctoral Advisees:* Gustav Baardsen (PhD

UiO, Oslo), Gustav Jansen (PhD UiO, now ORNL), Torquil McDonald Sørensen (PhD UiO, Oslo), Justin Lietz (PhD MSU), Sam Novario (PhD MSU, now at ORNL), Fei Yuang (PhD MSU, now at Google), Andreas Ekström (UiO and MSU, now at Chalmers, Sweden), Simen Kvaal (UiO, now Professor at UiO), Sølve Selstø (UiO, now OsloMet University) Nicolas Michel (MSU, now Lanzhou China).