## CV – Morten Hjorth-Jensen

**Role in the project** Centre director  Principal investigator   
**Personal information**

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| First name, Surname: | Morten, Hjorth-Jensen | | |
| Date of birth: | 1961 | Sex: | Male |
| Nationality: | Norwegian, permanent resident of the U.S.A. | | |
| Researcher unique identifier(s) | https://orcid.org/0000-0003-0174-1364 | | |
| URL for personal website: | http://mhjgit.github.io/info/doc/web/. Full Vitae can be downloaded from http://mhjgit.github.io/info/doc/pub/cv/html/cv.html. | | |

**Education**

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| Year | Faculty/department - University/institution - Country |
| 1993 | Department of Physics, University of Oslo, Norway, Ph.D in Theoretical Nuclear Physics |
| 1988 | Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway, Siv.Ing. in Theoretical Physics (Master of Science equivalent) |

**Positions - current and previous**

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| Year | Job title – Employer - Country |
| 1994-1996 | ECT, Trento, Italy, Postdoctoral Researcher in Theoretical Nuclear Physics |
| 1996-1998 | Nordita, Copenhagen, Denmark, Postdoctoral Researcher in Theoretical Nuclear Physics |
| 1999-2001 | Associate Professor of Physics, University of Oslo |
| 2001-now | Professor of Physics, University of Oslo |
| 2003-2011 | Adjunct Professor of Physics, Michigan State University |
| 2012-now | Professor of Physics, Michigan State University |
| 2004-2005 | Visiting Professor of Physics, CERN |

**Project management experience**

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| Year | Project owner - Project - Role - Funder |
| 2020-2023 | **750 kUSD from the** Department of Energy, *From Quarks to Stars; A Quantum Computing Approach to the Nuclear Many-Body Problem*. PI, grant number DoE-0000248785. This project overlaps strongly with the present application. Michigan State University. |
| 2020-2023 | **600 kUSD from** the National Science Foundation for the project *From nuclei to neutron stars*, PI with Scott Bogner, Grant number PHY-2013877. Strong overlap with present proposal. Michigan State University. |
| 2016-2025 | Co-PI at the Norwegian center of excellence in Education Center for Computing in Science Education, University of Oslo with annual funding from DIKU of **5MNOK**. This center has a strong overlap with the present since it runs the CompSci program and will be responsible for educational initiatives in Quantum Computing and Machine Learning. University of Oslo. |
| 2017-2020 | **600 kUSD** from the National Science Foundation for the *project From nuclei to neutron stars,* PI with Scott Bogner. Grant number PHY-1713901. Michigan State University. |
| 2014-2017 | **600 kUSD** from the National Science Foundation for the project *Computational Nuclear Many-body Physics*, PI with Scott Bogner. Grant number PHY-1404159. Michigan State University. |
| 2010-2015 | **15 MNOK** from the Research Council of Norway, Multi-scale physics on the computer, Collaboration between Universities. Grant number ISP-Fysikk/216699 . University of Oslo, NTNU and UMB. |

**Supervision of students**

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| Master's students | Ph.D.  students | University/institution - Country |
| 80 | 15 | Michigan State University and University of Oslo. My full CV (see homepage above) contains a complete list of all students and postdocs I have guided. |

**Other relevant professional experiences**

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| Year | Description - Role |
| 2017-21 | Board member of the European Center for Theoretical Studies in Nuclear Physics and Related areas (ECT), Trento, Italy |
| 2012-15 | Member of the Canadian research council's evaluation board on subatomic physics |
| 2014-16 | Editorial Board member of Physical Review C |
| 2010-now | Editorial Board member of European Physical Journal Special Topics |
| 2010-16 | Editorial Board member of European Physical Journal A |
| 2010-now | Editorial Board member of Springer's Lecture Notes in Physics |
| 2014-now | Editorial Board member of Springer's Undergraduate Lecture Notes in Physics |
| 2016-now | Editorial Board member of Springer's UniTexts in Physics |
| 2017-now | Editorial Board member of Springer's Graduate Texts in Physics |
| 2016-now | Editorial Board member of Springer's Undergraduate Texts in Physics |
| 2008-14 | Editorial board member of Computers in Science and Discovery journal, a journal by IOP, UK |
| 2013-16 | Steering Committee member of the FRIB theory alliance at Michigan State University |
| 2010-19 | Initiated and led the Nuclear Talent initiative from 2010 till 2015, member of the Steering committee till 2019. |
| 2009-11 | Leader of the Nuclear Physics group at the University of Oslo |
| 2015-now | Initiated in 2015 and chair of the newly established Master of Science program in Computational Science, University of Oslo, a new cross-disciplinary educational initiative with partners in physics, chemistry, biology, geoscience, computer science, mathematics, statistics, and material science. |
| 2000-now | I am also the referee for more than 20 Scientific journals, spanning from Mathematical Physics to particle physics. In addition I have evaluated and evaluate research applications from 17 National Research Councils. I am also a member of more than ten International Advisory committees for various conferences. |

**Publications Statistics for Morten Hjorth-Jensen:**

A total of 152 articles published in journals with a referee system, of which 22 Physical Review Letters articles, 17 Rapid communications in Physical Review C, seven Physics Letters B articles, one Astrophysical Journal Letters article and one Nature Physics article**.** Written two Physics viewpoints and been highlighted in one other and four large review articles, one in Reviews of Modern Physics, two in Physics Reports and one in Reports on Progress in Physics. One article for Reviews of Modern Physics on Machine Learning in preparation for spring 2021. Three books and one being written. Cited 12113 times in Google scholar with h-index =57. 58 contributions to conference proceedings (both refereed and non-refereed) and more than 200 invited talks and lectures at conferences, workshops, institute seminars and schools.

**Books**

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| Year | Titles and publishers |
| 2017 | M. Hjorth-Jensen, Maria Paola Lombardo, and Ubirajara Van Kolck (editors), Computational Nuclear Physics-Bridging the scales, from quarks to neutron stars, Lectures Notes in Physics **936**, 2017. |
| 2020 | Morten Hjorth-Jensen, Computational Physics, an introduction, IOP, in press |
| 2021 | Morten Hjorth-Jensen, Computational Physics, an advanced course, IOP, in press |

**Elected Member of Academies and Societies**

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| Year | Academy or Society |
| 2007 | Fellow of the American Physical Society |
| 2013 | Elected member of the Norwegian Academy of Sciences and Letters |
| 2015 | Elected member of the Royal Norwegian Society of Sciences and Letters |

**Awards**

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| Year | Award and institution |
| 2011 | University of Oslo award for excellence in teaching for the **Computing in Science Education** project |
| 2000 | University of Oslo award for excellence in teaching |
| 2008 | Oak Ridge National Laboratory excellence in research award |
| 2008 | Outstanding referee of the American Physical Society |
| 2012 | NOKUT (Norwegian entity of quality assessment in higher education) award for excellence in teaching for the **Computing in Science Education** project. |
| 2015 | University of Oslo award for excellence in teaching for developing the Computational Physics group |
| 2016 | Favorite graduate teacher at the Department of Physics and Astronomy at Michigan State University |
| 2018 | Olav Thon Foundation National prize for excellence in teaching award (National, all Norwegian higher education institutions |
| 2018 | Award as best graduate teacher at the Department of Physics and Astronomy at Michigan State University |
| 2020 | Merited teacher at the University of Oslo |

**Major contributions to the early careers of excellent researchers:** during the last 20 years I have guided more than 100 graduate students and postdoctoral fellows. Several of these have obtained prestigious positions. Simen Kvaal (PhD 2008) and recipient of ERC starting grant; Gaute Hagen (Phd=D 2005) and recipient of DoE early career award and senior scientist at Oak Ridge National Laboratory; Gustav Janssen (PhD 2012) and senior researcher in Computational Science at Oak Ridge National Laboratory; Øystein Elgarøy (PhD 1999) and Professor in Astrophysics, UiO; Eirik Ovrum (PhD 2007), associate professor USN; Sølve Selstø, (PD 2010), Professor in Physics at OsloMet; Marius Lysebo (PhD 2010), Associate Professor at OsloMet; Nicolas Michel (PD MSU 2013), senior researcher at Langzhou Nuclear Physics Laboratory, China; Andreas Ekstrøm, (PD 2014), now Associate Professor in Physics at Chalmers, Gothenburg, Sweden; My CV contains a more detailed list of students and their present occupations and how they have excelled as researchers.

**Ten representative publications (last ten years only):**

1. Fei Yuan, Sam Novario, Nathan Parzuchowski, Sarah Reimann, Scott K. Bogner and Morten Hjorth-Jensen, *Addition and Removal Energies of Circular Quantum Dots*, J. Chem. Phys. **147**, 164109 (2017).
2. G. Hagen, A. Ekstrom, C. Forssen , 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**, 186–190 (2016).
3. 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).
4. G. Baardsen, A. Ekstrom, G. Hagen, and M. Hjorth-Jensen, *Coupled-cluster studies of infinite nuclear matter*, Physical Review **C 88**, 054312 (2013).
5. A. Ekstrom, G. Baardsen, C. Forssen, G. Hagen, M. Hjorth-Jensen, G. R. Jansen, R. Machleidt, W. Nazarewicz, T. Papenbrock, J. Sarich, and S. M. Wild, *An optimal chiral interaction at next-to-next-to leading order,* Physical Review Letters **110**, 192502 (2013).
6. Gaute Hagen, Morten Hjorth-Jensen, Gustav Ragnar Jansen, Ruprecht Machleidt, and Thomas Papenbrock, *Evolution of shell structure in neutron-rich calcium isotopes,* Physical Review Letters **109**, 032502, 2012.
7. Gaute Hagen, Morten Hjorth-Jensen, Gustav Ragnar Jansen, Ruprecht Machleidt, and Thomas Papenbrock, *Continuum effects and three-nucleon forces in neutron-rich oxygen isotopes*, Physical Review Letters **108**, 242501, 2012.
8. O. Jensen, Gaute Hagen, Morten Hjorth-Jensen, Alex Boyd Brown, and Alexandra Gade, *Quenching of spectroscopic factors for proton removal in oxygen isotopes,* Physical Review Letters **107,** 032501, 2011.
9. Magnus Pedersen Lohne, Gaute Hagen, Morten Hjorth-Jensen, Simen Kvaal, and Francesco Pederiva, *Ab initio calculations of Circular quantum dots*., Physical Review **B 84**, 032501, 2011.
10. Elise Bergli and Morten Hjorth-Jensen, *Summation of Parquet diagrams as an ab initio method in nuclear structure calculations,* Annals of Physics **326**, 1125, 2011.

**Invited presentations to internationally established conferences and/or international advanced schools and organization of international conferences in the field of the applicant (membership in the steering and/or organizing committee):**

During the last 20 years I have organized more than 30 schools and workshop on various continents (Asia, Northern America, Africa and Europe). The last workshop I organized was on Quantum Computing and Machine Learning, see <https://indico.ectstar.eu/event/85/program>, November 2-6, 2020. The scientific content of this workshop is highly relevant for this proposal. I have given more than 200 talks at schools, conferences and workshops. In addition I have initiated several educational initiatives like the Nuclear Talent initiative, see <https://fribtheoryalliance.org/TALENT/>. I am also member of the advisory committees of 10 large meetings series: 22nd International Few-Body Conference, member of IAC 2018; International Nuclear Physics Conference, member of IAC since 2008; Nuclear Structure 2010 and 2014, member of IAC; Program Advisor Committee for Recent Progress in Many-Body Theories, member since 2007; Scientific advisory committee for Nuclear Theory in the Supercomputing Era; International Advisory committee of International Conference on Mathematical Modeling in Physical Sciences; International Advisory committee for XI Latin American Symposium on Nuclear Physics and Applications; International Advisory Board for Conference on Computational Physics; International Advisory committee for EURORIB15 and EURORIB18; International Advisory committee for SIAM conference on Computational Science and Engineering in Boston, 2013