

Postgraduate Application Form

UNIVERSITY OF CAMBRIDGE
Postgraduate Admissions Office

Olsen, Miss Ronja Martine

Course

MASt in Astrophysics (MASAS)

Department

Institute of Astronomy

Course start date

01 Oct 2024 (MT 2024)

Date submitted

05 Dec 2023

Mode of study

Full Time

PUF

No

Academic History			
Sep 2020 - May 2024 <i>(Not yet obtained)</i>	Bachelor of Science in Physics (Physics and Astronomy) - All or mostly full-time	4.00/4.00	Hofstra University ** (<i>United States</i>)
Sep 2020 - May 2024 <i>(Not yet obtained)</i>	Bachelor of Science in Mathematics with Chemistry (Mathematics) - All or mostly full-time	4.00/4.00	Hofstra University ** (<i>United States</i>)
Jun 2020 - Aug 2020	None in Effectiveness in Writing (English) - All or mostly full-time	3.67/4.00	American Public University sys ** (<i>United States</i>)
Jun 2020 - Aug 2020	None in Int & Global Exploration (Humanities) - All or mostly full-time	4.00/4.00	Southern New Hampshire Uni (<i>United States</i>)

Immigration

Nationality

Norway (1st)

Country of birth

Norway

Currently ordinarily resident

Norway

Country of birth is ordinary residence since birth

Yes

Estimated fee status

Overseas

Visa

Required

Visa type

I do not currently have a UK visa

Language

I have recently studied for 3 years (ending within the last 2 years) at a level equivalent to a UK Bachelor degree in a list A country.

Scholarships

Apply for funding

Yes

Apply for Cambridge Trust

Yes

Apply for Gates Cambridge

No

Curriculum Vitae

Uploaded

Career Goals

997/1000 chars

Fueled by my curiosity about the universe's interconnectedness and the fundamental forces shaping it, I've pursued dual Bachelor of Science degrees in Physics and Mathematics with a Chemistry concentration at Hofstra University. This interdisciplinary foundation equips me for exploration across various branches of astronomy.

My ultimate career goal is a Ph.D. in astrophysics, delving into groundbreaking research, particularly in astrophysical chemistry. The MAST in Astrophysics program at the University of Cambridge is an ideal place to explore my diverse interests before specializing further.

Beyond research, I aspire to be a professor in astrophysics, nurturing the next generation's curiosity and critical thinking. The MAST program at Cambridge aligns with my goals, providing a platform to hone skills, deepen understanding, and contribute meaningfully to the field, setting me on the path to an astrophysics Ph.D. Eager to embark on this journey, I appreciate your consideration.

Additional Information to Support Application

899/1000 chars

During my undergraduate studies, I have also had the privilege of conducting research under Dr. Christina Lacey, Chair of Hofstra's Physics and Astronomy Department. As her research student since the Fall of 2021, I've actively contributed to multiple radio astronomy projects. This work involves mastering programming and application of a variety of data calibration and analysis software, as well as designing scripts for the analysis of observational data, and contributing to three observations submitted to The Karl G. Jansky Very Large Array. Two of these observations will be part of our upcoming paper on SNR J1228+441, presented as an iPoster at the 242nd AAS meeting in June 2023. Dr. Lacey and I are also working on imaging and analyzing the radio properties of other galaxies for three separate projects. We anticipate the publication of our work on these projects in the upcoming year.

Course Specific Questions

Core - statement of interest

I am curious about the universe's interconnectedness and the particles and forces governing it. Through my experiences as a tutor and club leader at Hofstra, I developed a passion for teaching and mentoring. My goal is thus to obtain a Ph.D. in astrophysics and eventually work in academia to mentor the next generation of scientists while contributing to scientific advancement. The MAST Astrophysics Program at Cambridge is an ideal next step in my academic journey to achieve this. At Hofstra, I have explored various physics, math, and chemistry disciplines. In addition to obligatory courses, I actively sought classes to broaden my horizons to fields like computational chemistry, general relativity, and cosmology. My current interest is astrophysical chemistry. I am fascinated by the processes in the interstellar medium and their relation to the formation and evolution of astronomical objects and habitable zones. However, I find many other astronomy branches intriguing, such as gravitational waves, black holes, and planetary science. Under Dr. Christina Lacey's mentorship, I have actively contributed to radio astronomy projects since Fall 2021, focusing on the detection and evolution of supernova remnants. This involves programming and application of data calibration and analysis software, and designing Python scripts to analyze our data. I believe my diverse skills, research experience, and dedication make me a strong candidate, and thank you for your consideration.

Core - reasons for applying

I am drawn to the MAST in Astrophysics program at the University of Cambridge because it provides an ideal opportunity to enhance my knowledge, understanding, and research skills in the field. Cambridge's distinguished faculty, cutting-edge resources, and collaborative environment align seamlessly with my ambition to delve deeper into astrophysical

mysteries. The program's flexibility and variety of courses also allow me to explore my diverse interests in astrophysical chemistry of the interstellar medium, dark matter, planetary and atmospheric science, and more. Moreover, Cambridge's emphasis on excellence resonates with my unwavering commitment to scientific rigor, reflected in my research endeavors, academic achievements, and leadership roles. I am enthusiastic about applying my skills and passion to this esteemed institution and believe the dynamic academic setting at Cambridge will propel my ongoing development and contributions to the field.

Astronomy - Extra Materials WP Uploaded

Application Information

Academic Awards		
Homer & Mary Demetriou Endowed Scholarship	Recognized as an outstanding mathematics major intending a professional career related to math.	31 May 2023
2022 CRLA Outstanding Tutor Award	For contributing much to the academic success of my peers and motivate and inspire others.	31 May 2022
Harold E. Clearman Endowed Memorial Award	Achieving meritorious performance in coursework, and outstanding research in Physics	31 May 2023
HCLAS Academic Excellence Award Physics	- Nominated by the Physics and Astronomy Department for academic accomplishments and contributions .	31 May 2023
2023 ACS Undergraduate Award in Physical Chemistry	- Nominated by Hofstra's Chemistry Department for demonstrating excellence in physical chemistry.	31 May 2023

Employment History		
Jun 2023 - Sep 2023	Undergraduate Research Assistant	Physics and Astronomy Department at Hofstra University (<i>Hempstead, United States</i>)
Jun 2022 - Sep 2022	Undergraduate Research Assistant	Physics and Astronomy Department at Hofstra University (<i>Hempstead, United States</i>)
Sep 2021 -	Physics and Astronomy Tutor	Hofstra's Undergraduate Tutorial Program (<i>Hempstead, United States</i>)
Jan 2022 -	Mathematics Tutor	Hofstra's Mathematics Tutoring Center (<i>Hempstead, United States</i>)
Jun 2021 - Jul 2021	Summer Teacher	Rana Kommune (<i>Storforsheia, Norway</i>)

Other Applications Made

Ph.D	Astronomy	University of Virginia (<i>United States</i>)
Ph.D	Astronomy	UC Berkeley (<i>United States</i>)

Personal Information

Identifying Information

Full name

Olsen, Miss Ronja Martine

Date of birth

06 Feb 2002

Previous name

Legal gender

Female

Contact

Email

ronjamartine6868@gmail.com

Phone

+1 603 937 7262 (1st)

Skype address

Contact address

789 Front St, Hempstead, New York, 11550, United States

Home address

Dalbakken 1, Storforsheia, 8630, Norway

Valid until

31 May 2024

Valid until

Dependants

Partner

WILL NOT bring partner

Child

WILL NOT bring children

Disability

Disability

No

Further information

Adjustment for Interview

Adjustment required

No

Details

College Preferences

College

No College preference

Current Membership

College

Not College member

Visa Requirement

Visa type

I do not currently have a UK visa

Study Visas

Visa not entered

Funding Application

Cambridge Trust

Here is a list of CT awards that you would like to be considered

Aker Scholarship at University of Cambridge

I am a Norwegian citizen and was born and raised in Norway, and I am applying for the MAST Astrophysics program at the University of Cambridge. This should be sufficient to meet the criteria of this scholarship.

Williams Papworth Studentship

You have applied for Williams Papworth Studentship

Gates Cambridge Scholarships (Overseas)

Apply for Gates Cambridge No

Personal Statement0/3000 chars

Harding Scholarship

Mastercard Foundation

UKRI

Department Funding

College Funding

Based on the information you have provided, you are eligible to apply for these awards.

Girton Joyce Biddle Scholarship

You have applied for Girton Joyce Biddle Scholarship

Sheepshanks Studentship in Astronomy

You have applied for Sheepshanks Studentship in Astronomy

Wolfson College & Rowan Williams Cambridge Studentship

Separate application form
To be considered for this studentship, applicants should complete and return a separate application form to the Trust, which has been designed to assist the Trust in the identification of eligible candidates. The Rowan Williams Cambridge Studentship application form is available at <https://www.cambridgetrust.org/our-scholarships/highlighted-scholarships/rowan-williams-cambridge-studentship>.
Notes for applicants:
The Rowan Williams Cambridge Studentships are not available for courses offered by the Institute of Continuing Education, premium rate courses offered by the Judge Business School (including MBA, MFin, EMBA etc.) or for courses where the fees are charged at the higher Clinical rate.
Selection panels will assess applications taking regard of the severity of barriers faced to pursuing higher education at the University of Cambridge.

Your Funding

Funding Sources

No funding sources entered

Declaration

The information you have provided forms the legal basis of your application to the University of Cambridge. We reserve the right to refuse admission in the event of any misrepresentation by you. Submission of an application does not imply an offer of admission.

- The University of Cambridge, the Cambridge Colleges, the Gates Cambridge Trust and the Cambridge Commonwealth, European and International Trust (and their collaborators) will use your personal information for the purpose of processing your applications for admission and funding and deciding whether to offer you a place for the course you have applied for. For further information on the use of your personal information during the application process, please see [How we use your personal information \(for applicants\)](#).
- I certify that all the information given in this application is complete and accurate. I also understand that if I have given false or misleading information, the University of Cambridge will not admit me as a Postgraduate student and may take legal action against me.
- I certify that I am the original and sole author of all work submitted as part of this application, except where clearly indicated otherwise.
- I understand that if my application is unsuccessful, the papers relating to it will be destroyed and cannot be returned.

I confirm that I have read, understand and agree to the above declarations.

Student No: 703141910

HOFSTRA UNIVERSITY

Date Issued: 18-OCT-2023

Record of: Ronja M Olsen

126 Hofstra University
Hempstead, New York 11549-1260

Page: 1

Current Name: Ronja M Olsen
Dalbakken 1
Storforshel,
Norway

Issued To: Ronja Olsen

Parchment DocumentID: TE4JOJIIJ

Course Level: Undergraduate

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
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Current Program

Major : Physics
Mathematics

Maj/Concentration : Chemistry

Minor : Chemistry

Transfer Information continued:

WSC 001	COMPOSITION	3.00 TR
Ehrs: 23.00	GPA-Hrs: 0.00 QPts: 0.00	GPA: 0.00

06/20-06/20 Southern New Hampshire Univ

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R	GS	001	(IS) INTRO TO GLOBAL STUDIES	3.00 TR
		Ehrs: 3.00		GPA-Hrs: 0.00 QPts: 0.00		GPA: 0.00	

TRANSFER CREDIT ACCEPTED BY THE INSTITUTION:

06/20-06/20 American Military University

9/19-5/20 Advanced Placement

WSC 002	COMPOSITION	3.00 TR
Ehrs: 3.00	GPA-Hrs: 0.00 QPts: 0.00	GPA: 0.00

CHEM 003A	(NS) GENERAL CHEMISTRY I	3.00 TR
CHEM 003B	(NS) GENERAL CHEMISTRY LAB I	1.00 TR
CHEM 004A	(NS) GENERAL CHEMISTRY II	3.00 TR
CHEM 004B	(NS) GENERAL CHEMISTRY LAB II	1.00 TR
ENGL 999	LIBERAL ARTS ELECTIVE	3.00 TR
MATH 071	(MA) ANALYTIC GEOM & CALC I	4.00 TR
PHYS 011A	(NS) GENERAL PHYSICS	4.00 TR
PHYS 011B	(NS) GENERAL PHYSICS LAB	1.00 TR

INSTITUTION CREDIT:

Fall Semester 2020
HUHC011 is for honors credit
HUHC013 is for honors credit
MATH072 is for honors credit

***** CONTINUED ON NEXT COLUMN ***** CONTINUED ON PAGE 2 *****



Evan S. Koegl

Registrar & Director of Academic Records

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Hempstead, New York 11549-1260

Page: 2



SUBJ NO.	COURSE TITLE	CRED GRD	PTS R	SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
Institution Information continued:				Institution Information continued:			
CHEM 080	SEMINARS IN CHEMISTRY	2.00 A	8.00	Ehrs: 17.00 GPA-Hrs: 17.00 QPts: 68.00 GPA: 4.00			
HUHC 011	(HP) C&E FALL SOCIAL SCIENCES	3.00 A	12.00	Provost List			
HUHC 013	(LT) C & E FALL HUMANITIES	3.00 A	12.00	Fall Semester 2021			
MATH 072	(MA) ANALYTIC GEOM & CALC II	4.00 A	16.00	MATH073 is for honors credit			
PHYS 012A	(NS) GENERAL PHYSICS	4.00 A	16.00	CHEM 135	FOUNDATIONS OF ORGANIC CHEM	4.00 A	16.00
PHYS 012B	(NS) GEN PHYSICS LAB	1.00 A	4.00	MATH 073	(MA) ANALYTIC GEOM & CALC III	4.00 A	16.00
PROF EXAM	WRITING PROFICIENCY EXAM	0.00 P	0.00	PHYS 104	ELECTRICITY&MAGNETISM	3.00 A	12.00
Ehrs: 17.00 GPA-Hrs: 17.00 QPts: 68.00 GPA: 4.00				PHYS 118A	MODERN PHYSICS	3.00 A	12.00
Provost List				PHYS 170	INDEPENDENT UG RESEARCH	2.00 A	8.00 I
Spring Semester 2021				Ehrs: 16.00 GPA-Hrs: 16.00 QPts: 64.00 GPA: 4.00			
HUHC012 is for honors credit				Provost List			
HUHC014 is for honors credit				Spring Semester 2022			
CHEM 112	EXCEL FOR CHEMISTS	1.00 A	4.00	MATH 114	(MA)INTRO TO HIGHER MATHEMATCS	3.00 A	12.00
CHEM 139	FOUNDATIONS OF INORGANIC CHEM	3.00 A	12.00	MATH 143	(MA) ENGINEERING MATH 1	3.00 A	12.00
CHEM 140	FOUNDNS OF INORGANIC CHEM LAB	1.00 A	4.00	PHYS 135	OPTICS	3.00 A	12.00
HUHC 012	(BH) C&E SPR SOCIAL SCIENCES	3.00 A	12.00	PHYS 137	OPTICS LAB	1.00 A	4.00
HUHC 014	(LT) C & E SPRING HUMANITIES	3.00 A	12.00	PHYS 170	INDEPENDENT UG RESEARCH	3.00 A	12.00 I
MATH 131	(MA) ELEM DIFFERENTL EQUAT	3.00 A	12.00				
PHYS 140	MECHANICS	3.00 A	12.00				

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Evan S. Koegl
Registrar & Director of Academic Records

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Hempstead, New York 11549-1260

Page: 3



SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
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Institution Information continued:

Ehrs: 13.00 GPA-Hrs: 13.00 QPts: 52.00 GPA: 4.00

Provost List

Fall Semester 2022

MATH135A is for honors credit

CHEM 145	FOUNDATIONS OF PHYSICAL CHEM	4.00 A	16.00
MATH 135A	(MA) LINEAR ALGEBRA	4.00 A	16.00
MATH 171	(MA) REAL ANALYSIS 1	3.00 A	12.00
PHYS 159	INTRO-QUANTUM MECH	3.00 A	12.00
PHYS 171	INDEPENDENT UG RESEARCH	3.00 A	12.00

Ehrs: 17.00 GPA-Hrs: 17.00 QPts: 68.00 GPA: 4.00

Provost List

Spring Semester 2023

ASTR 190	INDEPENDENT STUDIES	2.00 A	8.00
CHEM 191	THEORY OF ELECTRONS	3.00 A	12.00
MATH 173	(MA)THEORY OF FUNC OF COMP VAR	3.00 A	12.00
PHYS 118B	MODERN PHYSICS LAB I	1.00 A	4.00
PHYS 136	STAT MECH W/ THERMODYNAMICS	3.00 A	12.00
PHYS 160	SOLID STATE PHYSICS	3.00 A	12.00

***** CONTINUED ON NEXT COLUMN *****

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
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Institution Information continued:

Ehrs: 15.00 GPA-Hrs: 15.00 QPts: 60.00 GPA: 4.00

Provost List

Fall Semester 2023

IN PROGRESS WORK

DNCE 015A	(CP) BALLET 1A	2.00	IN PROGRESS
MATH 100	COMMUNICATING MATHEMATICS	1.00	IN PROGRESS
MATH 145	(MA) ABSTRACT ALGEBRA 1	3.00	IN PROGRESS
PHYS 125	INTRO TO ASTROPHYSICS	3.00	IN PROGRESS
PHYS 170L	INDEPENDENT UG RESEARCH LAB	2.00	IN PROGRESS
PHYS 171	INDEPENDENT UG RESEARCH	3.00	IN PROGRESS

In Progress Credits 14.00

***** TRANSCRIPT TOTALS *****

	Earned Hrs	GPA Hrs	Points	GPA
TOTAL INSTITUTION	95.00	95.00	380.00	4.00
TOTAL TRANSFER	29.00	0.00	0.00	0.00
OVERALL	124.00	95.00	380.00	4.00

***** END OF TRANSCRIPT *****



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HOFSTRA UNIVERSITY

126 Hofstra University, Hempstead, NY 11549-1260 Phone (516) 463-6680 Fax (516) 463-6421

ACCREDITATION

For accreditation information, please see the Hofstra website at:
http://www.hofstra.edu/News/UR/ur_accreditations.cfm

Calendar

The program of regular semesters is based on the 4 x 4 calendar with fall classes beginning in late August or early September and concluding before December 25.

Course Numbering System

Courses numbered from 1 to 199 are for undergraduates only.
Courses numbered 200 and above are for graduates only.

Credits

The unit of credit is the semester hour. The value of each course is stated in terms of credit hours.

Degrees with Distinction (Baccalaureate)

Summa cum laude: 3.9 Magna cum laude: 3.8 Cum laude: 3.6
Must complete at least 82 hours in residence at Hofstra. Candidates with fewer than 82 hours but at least 60 hours in residence at Hofstra who are qualified in terms of their record at the University and in terms of their cumulative record, which shall include work completed at other institutions and at Hofstra, may be graduated with distinction.

Degrees with Distinction (Master's)

Students must attain a minimum grade point average of 3.75 with at least 80 percent of the credits for the degree earned at Hofstra.

Degree Requirements and institutional policy on withdrawals, transfer credits, incompletes, repeated courses, inactive grades, etc. may be found in the *University Bulletin*.

No more than 30 credits for CLEP, AP and NYCPE may be applied to the Hofstra degree.
Credits earned at junior and community colleges are limited for graduation credit to 64 semester hours with the following exceptions:
Engineering science programs, 69 credits
Business administration programs, 65 credits

Grading System – Undergraduate (UG) and Graduate

- A** Academic performance is of honors level (UG). Exceptional (Graduate).
- AF** Administrative Failure. Withdrawal without official notification (UG and Graduate).
- B** Academic performance distinctly above that required by the course (UG). Superior (Graduate).
- C** Academic performance achieved the objectives of the course (UG). Satisfactory (Graduate).
- CR** Credit. Indicates the satisfactory completion of the master's essay or problem (Graduate only).
- D** Academic performance less than required by the course but sufficient to receive full credit (UG). Not creditable for a graduate degree at Hofstra. However, the course credit is counted as credits earned, and the D grade is included in determining the cumulative grade point average (Graduate).
- F** Failing. No semester hour credit is received. Only one F grade in any one course will be included in the cumulative grade point average (UG and Graduate).
- I** Incomplete (UG and Graduate).
- INC** Permanent Incomplete (Graduate only).

- NA** Indicates student never attended and is not included in determination of grade point average (UG only).
- NC** No credit. (UG and Graduate).
- NCr** *New College only.* Indicates student did not complete requirements for the course (not included in determination of average) (UG only).
- NR** Indicates that a grade has not been submitted by the instructor (UG and Graduate).
- P** Mandatory Pass/Fail (UG). Passing, not counted in determining cumulative GPA. Mandatory Pass/Fail (Graduate). Passing, no quality points.
- P⁺** Optional Pass/D+/D/Fail (UG). P is equivalent to C- or better.
- P⁻** Optional P/F (Graduate). Passing, no quality points. Except for the Law School, a grade of P is equal to a B- or better.
- P[^]** Optional Pass/D+/D/Fail (UG) *New College and School for University Studies.* P is equal to C or better.
- Pr** Progress (UG). Used normally to report the first semester's satisfactory work in two-semester individually supervised courses, normally for seniors.
- P⁺** Progress (Graduate). Used chiefly to report on 301, the first semester's work on the master's essay or problem.
- T-** Transfer course grade. Grade is less than C- and not included in cumulative GPA (UG).
- TR** Transfer course grade. Not included in cumulative GPA (UG and Graduate).
- UW** Unofficial Withdrawal. Student has not officially withdrawn. (UG and Graduate).
- W** Withdrawn (UG and Graduate).

Notes:

Hofstra uses an alphabetical system of grades, including plus (+) and minus (-) to describe the quality of the student's work.

A dot (.) after the grade indicates that no credit was received (UG and Graduate).

Transcript Abbreviations

- Ehrs** Earned credits (May include non-degree courses).
- GPA-Hrs** Credits for the GPA.
- PTS** Quality points.
- R** Repeat Indicator (**I** - included in earned credits and GPA; **E** - excluded from credits and GPA; **A** - included in GPA, but no credits earned).

In accordance with The Family Educational Rights and Privacy Act of 1974, you are hereby notified that this information is provided upon the condition that you, your agents or employees, will not permit any other party access to this record without the written consent of the student. Alteration of this transcript may be a criminal offense.

Student No: 703141910

HOFSTRA UNIVERSITY

Date Issued: 18-OCT-2023

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126 Hofstra University
Hempstead, New York 11549-1260

Page: 1

Current Name: Ronja M Olsen
Dalbakken 1
Storforshel,
Norway

Issued To: Ronja Olsen

Parchment DocumentID: TE4JOJIIJ

Course Level: Undergraduate

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
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Current Program

Major : Physics
Mathematics

Maj/Concentration : Chemistry

Minor : Chemistry

Transfer Information continued:

WSC 001	COMPOSITION	3.00 TR
Ehrs: 23.00	GPA-Hrs: 0.00 QPts: 0.00	GPA: 0.00

06/20-06/20 Southern New Hampshire Univ

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R	GS	001	(IS) INTRO TO GLOBAL STUDIES	3.00 TR
						Ehrs: 3.00 GPA-Hrs: 0.00 QPts: 0.00	GPA: 0.00

TRANSFER CREDIT ACCEPTED BY THE INSTITUTION:

06/20-06/20 American Military University

9/19-5/20 Advanced Placement

WSC 002	COMPOSITION	3.00 TR
Ehrs: 3.00	GPA-Hrs: 0.00 QPts: 0.00	GPA: 0.00

CHEM 003A	(NS) GENERAL CHEMISTRY I	3.00 TR
CHEM 003B	(NS) GENERAL CHEMISTRY LAB I	1.00 TR
CHEM 004A	(NS) GENERAL CHEMISTRY II	3.00 TR
CHEM 004B	(NS) GENERAL CHEMISTRY LAB II	1.00 TR
ENGL 999	LIBERAL ARTS ELECTIVE	3.00 TR
MATH 071	(MA) ANALYTIC GEOM & CALC I	4.00 TR
PHYS 011A	(NS) GENERAL PHYSICS	4.00 TR
PHYS 011B	(NS) GENERAL PHYSICS LAB	1.00 TR

INSTITUTION CREDIT:

Fall Semester 2020
HUHC011 is for honors credit
HUHC013 is for honors credit
MATH072 is for honors credit

***** CONTINUED ON NEXT COLUMN ***** CONTINUED ON PAGE 2 *****



Evan S. Koegl

Registrar & Director of Academic Records

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HUHC 013	(LT) C & E FALL HUMANITIES	3.00 A	12.00	Fall Semester 2021			
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PHYS 012B	(NS) GEN PHYSICS LAB	1.00 A	4.00	MATH 073	(MA) ANALYTIC GEOM & CALC III	4.00 A	16.00
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Ehrs: 17.00 GPA-Hrs: 17.00 QPts: 68.00 GPA: 4.00				PHYS 118A	MODERN PHYSICS	3.00 A	12.00
Provost List				PHYS 170	INDEPENDENT UG RESEARCH	2.00 A	8.00 I
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HUHC014 is for honors credit				Spring Semester 2022			
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CHEM 139	FOUNDATIONS OF INORGANIC CHEM	3.00 A	12.00	MATH 143	(MA) ENGINEERING MATH 1	3.00 A	12.00
CHEM 140	FOUNDNS OF INORGANIC CHEM LAB	1.00 A	4.00	PHYS 135	OPTICS	3.00 A	12.00
HUHC 012	(BH) C&E SPR SOCIAL SCIENCES	3.00 A	12.00	PHYS 137	OPTICS LAB	1.00 A	4.00
HUHC 014	(LT) C & E SPRING HUMANITIES	3.00 A	12.00	PHYS 170	INDEPENDENT UG RESEARCH	3.00 A	12.00 I
MATH 131	(MA) ELEM DIFFERENTL EQUAT	3.00 A	12.00				
PHYS 140	MECHANICS	3.00 A	12.00				

***** CONTINUED ON NEXT COLUMN ***** CONTINUED ON PAGE 3 *****



Evan S. Koegl
Registrar & Director of Academic Records

This officially sealed and signed transcript is printed on blue SCRIP-SAFE® security paper with the signature printed in white. A raised seal is not required. When photocopied a security statement containing the name of the institution will appear. A BLACK ON WHITE OR A COLOR COPY SHOULD NOT BE ACCEPTED!

Student No: 703141910

HOFSTRA UNIVERSITY

Date Issued: 18-OCT-2023

Record of: Ronja M Olsen

126 Hofstra University
Hempstead, New York 11549-1260

Page: 3



SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
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Institution Information continued:

Ehrs: 13.00 GPA-Hrs: 13.00 QPts: 52.00 GPA: 4.00

Provost List

Fall Semester 2022

MATH135A is for honors credit

CHEM 145	FOUNDATIONS OF PHYSICAL CHEM	4.00 A	16.00
MATH 135A	(MA) LINEAR ALGEBRA	4.00 A	16.00
MATH 171	(MA) REAL ANALYSIS 1	3.00 A	12.00
PHYS 159	INTRO-QUANTUM MECH	3.00 A	12.00
PHYS 171	INDEPENDENT UG RESEARCH	3.00 A	12.00

Ehrs: 17.00 GPA-Hrs: 17.00 QPts: 68.00 GPA: 4.00

Provost List

Spring Semester 2023

ASTR 190	INDEPENDENT STUDIES	2.00 A	8.00
CHEM 191	THEORY OF ELECTRONS	3.00 A	12.00
MATH 173	(MA)THEORY OF FUNC OF COMP VAR	3.00 A	12.00
PHYS 118B	MODERN PHYSICS LAB I	1.00 A	4.00
PHYS 136	STAT MECH W/ THERMODYNAMICS	3.00 A	12.00
PHYS 160	SOLID STATE PHYSICS	3.00 A	12.00

***** CONTINUED ON NEXT COLUMN *****

SUBJ NO.	COURSE TITLE	CRED GRD	PTS R
----------	--------------	----------	-------

Institution Information continued:

Ehrs: 15.00 GPA-Hrs: 15.00 QPts: 60.00 GPA: 4.00

Provost List

Fall Semester 2023

IN PROGRESS WORK

DNCE 015A	(CP) BALLET 1A	2.00	IN PROGRESS
MATH 100	COMMUNICATING MATHEMATICS	1.00	IN PROGRESS
MATH 145	(MA) ABSTRACT ALGEBRA 1	3.00	IN PROGRESS
PHYS 125	INTRO TO ASTROPHYSICS	3.00	IN PROGRESS
PHYS 170L	INDEPENDENT UG RESEARCH LAB	2.00	IN PROGRESS
PHYS 171	INDEPENDENT UG RESEARCH	3.00	IN PROGRESS

In Progress Credits 14.00

***** TRANSCRIPT TOTALS *****

	Earned Hrs	GPA Hrs	Points	GPA
TOTAL INSTITUTION	95.00	95.00	380.00	4.00
TOTAL TRANSFER	29.00	0.00	0.00	0.00
OVERALL	124.00	95.00	380.00	4.00

***** END OF TRANSCRIPT *****



Evan S. Koegl
Registrar & Director of Academic Records

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HOFSTRA UNIVERSITY

126 Hofstra University, Hempstead, NY 11549-1260 Phone (516) 463-6680 Fax (516) 463-6421

ACCREDITATION

For accreditation information, please see the Hofstra website at:
http://www.hofstra.edu/News/UR/ur_accreditations.cfm

Calendar

The program of regular semesters is based on the 4 x 4 calendar with fall classes beginning in late August or early September and concluding before December 25.

Course Numbering System

Courses numbered from 1 to 199 are for undergraduates only.
Courses numbered 200 and above are for graduates only.

Credits

The unit of credit is the semester hour. The value of each course is stated in terms of credit hours.

Degrees with Distinction (Baccalaureate)

Summa cum laude: 3.9 Magna cum laude: 3.8 Cum laude: 3.6
Must complete at least 82 hours in residence at Hofstra. Candidates with fewer than 82 hours but at least 60 hours in residence at Hofstra who are qualified in terms of their record at the University and in terms of their cumulative record, which shall include work completed at other institutions and at Hofstra, may be graduated with distinction.

Degrees with Distinction (Master's)

Students must attain a minimum grade point average of 3.75 with at least 80 percent of the credits for the degree earned at Hofstra.

Degree Requirements and institutional policy on withdrawals, transfer credits, incompletes, repeated courses, inactive grades, etc. may be found in the *University Bulletin*.

No more than 30 credits for CLEP, AP and NYCPE may be applied to the Hofstra degree.
Credits earned at junior and community colleges are limited for graduation credit to 64 semester hours with the following exceptions:
Engineering science programs, 69 credits
Business administration programs, 65 credits

Grading System – Undergraduate (UG) and Graduate

- A** Academic performance is of honors level (UG). Exceptional (Graduate).
- AF** Administrative Failure. Withdrawal without official notification (UG and Graduate).
- B** Academic performance distinctly above that required by the course (UG). Superior (Graduate).
- C** Academic performance achieved the objectives of the course (UG). Satisfactory (Graduate).
- CR** Credit. Indicates the satisfactory completion of the master's essay or problem (Graduate only).
- D** Academic performance less than required by the course but sufficient to receive full credit (UG). Not creditable for a graduate degree at Hofstra. However, the course credit is counted as credits earned, and the D grade is included in determining the cumulative grade point average (Graduate).
- F** Failing. No semester hour credit is received. Only one F grade in any one course will be included in the cumulative grade point average (UG and Graduate).
- I** Incomplete (UG and Graduate).
- INC** Permanent Incomplete (Graduate only).

- NA** Indicates student never attended and is not included in determination of grade point average (UG only).
- NC** No credit. (UG and Graduate).
- NCr** *New College only*. Indicates student did not complete requirements for the course (not included in determination of average) (UG only).
- NR** Indicates that a grade has not been submitted by the instructor (UG and Graduate).
- P** Mandatory Pass/Fail (UG). Passing, not counted in determining cumulative GPA. Mandatory Pass/Fail (Graduate). Passing, no quality points.
- P⁺** Optional Pass/D+/D/Fail (UG). P is equivalent to C- or better.
- P⁻** Optional P/F (Graduate). Passing, no quality points. Except for the Law School, a grade of P is equal to a B- or better.
- P⁺** Optional Pass/D+/D/Fail (UG) *New College and School for University Studies*. P is equal to C or better.
- Pr** Progress (UG). Used normally to report the first semester's satisfactory work in two-semester individually supervised courses, normally for seniors.
- P⁺** Progress (Graduate). Used chiefly to report on 301, the first semester's work on the master's essay or problem.
- T-** Transfer course grade. Grade is less than C- and not included in cumulative GPA (UG).
- TR** Transfer course grade. Not included in cumulative GPA (UG and Graduate).
- UW** Unofficial Withdrawal. Student has not officially withdrawn. (UG and Graduate).
- W** Withdrawn (UG and Graduate).

Notes:

Hofstra uses an alphabetical system of grades, including plus (+) and minus (-) to describe the quality of the student's work.

A dot (.) after the grade indicates that no credit was received (UG and Graduate).

Transcript Abbreviations

- Ehrs** Earned credits (May include non-degree courses).
- GPA-Hrs** Credits for the GPA.
- PTS** Quality points.
- R** Repeat Indicator (**I** - included in earned credits and GPA; **E** - excluded from credits and GPA; **A** - included in GPA, but no credits earned).

In accordance with The Family Educational Rights and Privacy Act of 1974, you are hereby notified that this information is provided upon the condition that you, your agents or employees, will not permit any other party access to this record without the written consent of the student. Alteration of this transcript may be a criminal offense.



OFFICE OF ADMISSION

April 28, 2020

Ronja Olsen
Dalbakken 1
Storforshei, Norway

Hofstra ID: 703141910

Dear Ronja,

Congratulations! After reviewing the financial documentation you submitted, it is my pleasure to offer you admission to Hofstra University as an undergraduate student. The combination of academic achievement and personal accomplishments you presented in your application stood out in one of our most competitive applicant pools ever. You deserve to be very proud of your achievements.

A member of my staff will contact you shortly to discuss your visa needs and non-immigrant status, as well as how to apply for an F-1 student visa, if you require one. Our Office of International Student Affairs will contact you as well. Visit hofstra.edu/isa for information on orientation, immigration policies, arrival in the United States and other helpful resources.

Your next step will be to secure a place in our incoming undergraduate class. To do so, ***please submit your tuition deposit and orientation fee through the Hofstra portal at my.hofstra.edu by Monday, June 1, 2020.*** You will not be able to register for classes or secure on-campus housing without first submitting this deposit. After your deposit is received, a member of our advising staff will help you set up your course schedule by phone.

Please be aware that if your native language is not English, you will be required to take an English language examination prior to registering for classes. Based upon the results of your examination, you may be required to take English language courses or enroll in our English Language Program.

Your admission is contingent upon successful completion of any remaining academic coursework, receipt of all final official transcripts, and/or proof of high school graduation (diploma or final exam results [A-Levels, IB, etc.]). Please be sure to arrange for your final transcripts to be sent to the Office of Admission.

You will continue to receive emails from Hofstra describing the extraordinary experience that awaits you and what to expect when you arrive, but please always feel free to email **InternationalAdmission@hofstra.edu** with questions. Important information will be posted in your Hofstra portal at **my.hofstra.edu** so please check it regularly. I look forward to meeting you at International Student Orientation in August. This orientation is mandatory for all international students. It is a great opportunity to be introduced to our campus community.

I look forward to welcoming you and your family to our community. Please visit hofstra.edu/ASD to register for one of our upcoming virtual events designed specifically for the newest members of the Hofstra Pride. We will notify you once we are able to resume on-campus visit opportunities.

Once again, congratulations on your admission to Hofstra University! I look forward to welcoming you to our campus in August.

Sincerely,

Jessica Eads
Vice President for Enrollment Management and
Dean of Admission and Financial Aid

Log in to the Hofstra portal at my.hofstra.edu to pay your enrollment deposit and secure your seat.

Username: h703141910 **ID:** 703141910

Forgot your password? Go to hofstra.edu/password to reset your forgotten password.

Need to activate your account? Go to hofstra.edu/newaccount to activate your account and set a password.

UNOFFICIAL TRANSCRIPT
AMERICAN PUBLIC UNIVERSITY SYSTEM

American Public University
American Military University
1-877-755-2787
111 West Congress Street
Charles Town, West Virginia 25414

Ronja M. Olsen
Dalbakken 1
Storforsthei, Norway 8630

Student Name: Ronja M. Olsen
DOB: 02/06/XXXX
StudentID: 5874575
DocumentID: TEE8MBQI

American Public University

Admission Date

06/29/2020

Program

Undergraduate Courses for Transfer

GPA

Conferred

3.6700

APU Courses

<u>Semester\Course Number</u>	<u>Course Title</u>	<u>Course Start Date</u>	<u>Course End Date</u>	<u>Hours Att</u>	<u>Hrs Earned</u>	<u>Grade</u>	<u>Quality Points</u>
Summer 2020							
ENGL102	Effectiveness in Writing	07/06/2020	08/30/2020	3.00	3.00	A-	11.0
Summary:		Cum GPA: 3.6700		3.00	3.00		11.0



OFFICE OF ADMISSION

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Storforshei, Norway

Hofstra ID: 703141910

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Sincerely,

Jessica Eads
Vice President for Enrollment Management and
Dean of Admission and Financial Aid

Log in to the Hofstra portal at my.hofstra.edu to pay your enrollment deposit and secure your seat.

Username: h703141910 **ID:** 703141910

Forgot your password? Go to hofstra.edu/password to reset your forgotten password.

Need to activate your account? Go to hofstra.edu/newaccount to activate your account and set a password.

Ronja Olsen
STUDENT ID: 1897273
D.O.B.: February 6
SSN: XXX-XX-
61 Elm St
Limerick ME 04048-3921

PROGRAM: Course Work Only - Undergraduate

Course	Title	CRD	GRD	GRDPT	Course	Title	CRD	GRD	GRDPT
SUMMER 2020									
PDHU-480D	Int & Global Exploration	3.00	A	12.00					
Term Credits:		3.00	Term GPA: 4.000						
GPA Credits:		3.00	Cum GPA: 4.000						
Degree Credits:		3.00							

- End of Undergraduate Record -



Academic reference for Miss Ronja Martine Olsen

MASt in Astrophysics

Referee Details

Name	Dr Christina Lacey	Job title	Professor of Physics and Astronomy, Chair
Email	christina.lacey@hofstra.edu	Department	Physics and Astronomy
Phone	516-463-7984	Institution	Hofstra University
Relationship	Professor, Research Mentor	City	Hempstead
Known for	Fall 2020 - present	Country	United States

Reference

Academic ranking	The best performance you have known in the last 5 years This year 10 students, Over the last 5 years, 30 students.
Student potential	Outstandingly original/creative/independent of thought
Course suitability	Exceptionally Suitable

Reference provided as uploaded file. Please see the next page.



Department of Physics and Astronomy- Berliner 102
151 Hofstra University
Hempstead, NY 11549-1510 USA

Tel: 1-516-463-7984 (Prof. Christina Lacey)
1-516-463-5582 (Ms. Laurie Kinzer, Exec. Secretary)
Fax: 1-516-463-3059
E-mail: Christina.Lacey@hofstra.edu

December 4, 2023

To Whom It May Concern:

I strongly and most enthusiastically support Ronja Olsen's application for admittance into the MAST in Astrophysics Program at the University of Cambridge.

Ronja has the qualities and academic preparation to succeed in a graduate program and will excel as both a teaching and research assistant: she wants to understand physics and always learn more, she works hard, has patience, is very independent, and communicates extremely well. Ronja's speaks English fluently, her command of the English language is excellent, and her written work is consistently better than many of the native English speaking students.

I have known Ronja Olsen for three years as her physics and astronomy research advisor and she is also a student in my PHYS 125 *Introduction to Astrophysics* course, which I am teaching this Fall. Ronja is in the top 1% of all the students (~ 100 physics majors) I have taught in my 23 years of teaching and mentoring university students. Demonstrating her academic excellence, Ronja has received multiple academic awards and scholarships from the Department of Physics and Astronomy, and impressively, she has also received academic awards from the Department of Chemistry and the Department of Mathematics, as well.

Ronja is an incredibly talented and organized student with an enormous aptitude for physics, astronomy, and teaching. As one of the top students I have seen as a professor, Ronja strives to thoroughly understand the subject matter in all of her courses. Ronja has also taken extra courses that were not required for her degree, such as a General Relativity Seminar, to gain additional breadth and experience in physics, as one would expect of a dedicated student.

Ronja's academic success can be seen through her stellar grades and especially through her work as a tutor in physics, astronomy and math. As a first year student, Ronja was advised that the best way to learn physics deeply and thor-

oughly was to teach physics; she took this advice to heart and has been a tutor for undergraduate students in both introductory calculus- and algebra-based physics in the Department of Physics and Astronomy and introductory calculus in the Department of Mathematics for three years. In Physics, Ronja also tutors students in Modern Physics and a post-baccalaureate student in Electricity and Magnetism.

Ronja is a problem-solver: some of the students she tutored asked her questions about astronomy for which we did not have any tutors. Seeing a need for astronomy tutoring, Ronja asked me if we needed astronomy tutors, and when I her told yes, she borrowed an introductory astronomy textbook, read the book over the summer, queried me about some topics, and then began tutoring introductory astronomy students in the Fall of 2022. For her outstanding efforts in tutoring, Ronja was awarded the College Reading and Learning Association (CRLA) Rick Sheets Award in 2022, which is a national award.

Hofstra's Society for Physics Students (SPS) chapter has been rejuvenated with Ronja's leadership; Ronja was the Vice President in 2021-2022 and the President of SPS since the fall of 2022. Ronja has organized talks from outside speakers, movie nights, Pi Day Activities, trips to museums, and with the help of the Department and Provost's office, a trip every semester to the Brookhaven National Laboratory since the Fall of 2022. Ronja is also very active in the Student Members of the American Chemical Society (SMACS) club on campus. Ronja works very well with others and has excelled as President of SPS as evidenced by the wide range of activities of SPS under her leadership.

Ronja is very involved with undergraduate life at Hofstra and I often see her hanging out with other students. She is always willing to volunteer for public outreach activities. For example, this fall, Ronja was a volunteer for the Girl Scouts of Nassau County STEM Workshop and she helped me organize student volunteers for a physics demonstration of ballistic trajectories for 250 Grade 2-8 students before a Hofstra basketball game.

It has been a pleasure working with Ronja on research projects. Ronja has been working with me on a few astronomy research projects using data from the National Radio Astronomy Facility Karl G. Jansky Very Large Array. Ronja has been involved with the calibration and imaging of raw radio data and has become very adept with CASA, AIPS, and various image display programs such as CARTA and SAOImage ds9. Additionally, I decided that I would finally transition my analysis codes from Fortran and shell scripts to python; Ronja learned python and Astropy and has been helping me to learn python, as well.

One of the projects involves an investigation of a supernova remnant in a nearby irregular galaxy NGC 4449. Ronja worked with me to submit the VLA scheduling blocks for the observations to monitor a young supernova remnant (SNR) J1228+441 in NGC 4449 and has also reduced and imaged all of the new and archival observations for this project. We are using these data to analyze the behavior of this SNR over time and extend the light curve over a 50 year timeline. We are investigating changes in the spectral indices and unexpected increases in flux densities, which would indicate changes in the interstellar medium or circumstellar medium environment that the SNR shock is encountering. These results are being incorporated into a paper that is in progress with a plan to submit the article to the *Astronomical Journal* this winter.

Ronja has also worked on reducing and imaging the nearby spiral galaxies of M83, NGC 6946, and IC342 to identify and measure the compact radio source populations in each galaxy. Ronja has been instrumental in developing python codes to streamline the data identification and build catalogs for this project. We are finalizing the source catalogs of the supernova remnant population, comparing our radio candidate SNRs with other SNR catalogs from other bands to search for overlaps, and analyzing the properties of the populations. These results will be written up in 2-3 papers that I plan to submit next Spring.

I have been impressed at Rona's initiative. When she encounters a problem with the calibration of data or imaging or python programming, she researches the web for answers and often find the solution before our next meeting. The largest impediment to Ronja's research progress has been my appointment as chair of my department starting in the Fall of 2022, which has severely impacted the time I have to work with Ronja. Fortunately, Ronja is very independent and self-starting; she has continued making progress with our projects.

Ronja presented a poster of our work on the young supernova remnant J1228+441 (SNR 4449-1) in NGC 4449 that included a light curve and analysis of the spectral index variability at the AAS summer meeting in Albuquerque, NM in June 2023 and will present a poster of her results from the investigation and identification of the compact radio sources in M83 at the AAS winter meeting in New Orleans in January, 2024.

The Hofstra Department of Physics and Astronomy has a small BS in physics program in terms of the numbers of physics majors, but our students have had much success in their post-undergraduate studies. In May of 2021, a Hofstra physics BS student was awarded a PhD in Physics from the University

of Notre Dame (with a thesis in Astrophysics) and two Hofstra students are expecting to defend their PdD theses this year or next, one in Physics at UCLA and another in Astronomy at New Mexico State University. Recently, Hofstra Physics graduates have been accepted to and begun Phd Programs in astronomy and physics at the University of Connecticut, chemical physics at the University of Maryland, physics at the University of Maine, and a student accepted into the masters program (no direct admission to PhD programs) in physics at ETH Zürich. Given my experience with Hofstra's physics program, I have no doubt that Ronja will also be a successful student in a PhD program in astronomy/astrophysics.

I whole-heartedly and enthusiastically support Ronja's application for acceptance into your MAST in Astrophysics program.

Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Christina Lacey', with a stylized, cursive script.

Christina Lacey
Chair and Professor
Dept. of Physics and Astronomy
Hofstra University

Academic reference for Miss Ronja Martine Olsen

MASt in Astrophysics

Referee Details

Name	Dr Benjamin Burrington	Job title	Associate Professor of Physics and Astronomy
Email	benjamin.a.burrington@hofstra.edu	Department	Physics and Astronomy
Phone	516-463-5585	Institution	Hofstra University
Relationship	Professor	City	Hempstead
Known for	4 years	Country	United States

Reference

Academic ranking	Among the top 5% in year (i.e., in the top 2 if the group size was 40) She is in the top 4 of the 70 or so physics students who have come through Hofstra University that I have taught.
Student potential	Outstandingly original/creative/independent of thought
Course suitability	Exceptionally Suitable

Reference provided as uploaded file. Please see the next page.



Department of Physics and Astronomy
Berliner 102
151 Hofstra University
Hempstead, NY 11549-1510 USA

Tel: 1-516-463-5585 (Prof. Benjamin A. Burrington)
1-516-463-5582 (Dept. Main Office, Laurie Kinzer)
Fax: 1-516-463-3059
E-mail: benjamin.a.burrington@hofstra.edu

To: Admissions Committee, University of Cambridge

From: Prof. Burrington

Date: December 4, 2023

To the admissions committee:

I write this letter of recommendation for Ronja Olsen, a double major in physics and mathematics here at Hofstra University. It is a pleasure to write this letter for Ronja who is an extremely intelligent, hard working, and independent student. She is truly an outstanding candidate, and I give her my highest recommendation.

Our department is relatively close knit, and so word spreads fast when we have an excellent student like Ronja. In spring semester of 2023 I was able to verify this first hand when Ronja took my Statistical Mechanics course (PHYS 136). Ronja set the bar in the class. She was even usually the first one in the classroom every morning, rearranging the seating to face the board. During class she pays close attention, picks things up very quickly, and even finds typos on the board during lectures. She set an excellent example for her classmates, making lectures feel more like a discussion, and this in turn made other students feel comfortable joining the conversation. This kind of atmosphere in a classroom is difficult to manufacture without a student who is willing to engage, especially a sharp one like Ronja. She ranked first in the class, easily earning an A.

Last semester, Ronja organized a group of students who were interested in learning general relativity (GR) and convinced me to teach this class (PHYS 170 L). On the days when we review homework, she is usually the first to go to the board, and usually has worked out most of the details already (the homework itself isn't due in written form for another week). Ronja is also usually the organizer of theses sessions on days I cannot attend. I fully expect Ronja to get an A in this course, as she does in all her courses. She is currently running a 4.0 GPA at Hofstra. This is a huge accomplishment, given that she has completed many difficult courses in her majors, including statistical mechanics, quantum mechanics, and abstract algebra.

In addition to this, Ronja has been integral to the physics community at Hofstra. She is currently our Society of Physics Students (SPS) chapter president, helping to organize student events. These include the “Sun Down Social” on the rooftop observatory on our building, events showcasing faculty and student research, and liquid nitrogen icecream socials. We are very lucky to have her in our department, and she adds an important element of student leadership in department activities.

Finally, Ronja also serves as a tutor the Physics and Astronomy department, and the Mathematics Department. She is excellent in this role as well. She interacts well with students, and has the breadth of knowledge needed to help them succeed. Right now, our tutoring centers play a crucial role helping to fill in certain gaps in their abilities left by (varied) covid-era high school experiences. Ronja has learned to manage larger numbers of students than is typical while tutoring, and is able to lead in a busy environment with many students, each with their own needs.

I would rank Ronja as one of the very best physics majors we have had in my ten years at Hofstra. She is clearly the top of her class this year, and I would place her in the top five of the seventy or so physics majors I have seen come through Hofstra. This comes from a fairly selective group: our department mainly educates engineers, and so we aren’t under pressure to accept students. Rather, we tend to recruit the strongest students we can find. That she stands out amongst this crowd should be taken as extremely high praise. Students from our program which match her abilities have gone on to successful graduate careers at Princeton, ETH Zurich, UCLA, and University of Arizona.

Overall, Ronja Olsen is one of the very best students I have seen come through the Hofstra physics major. She is very smart, hard working, organized, personable, helpful, and self-motivated. She works well on her own, and in groups. She is excellent with peers, professors, and with the students she helps in tutoring. Overall, she is an excellent candidate for graduate study. She has “it”. She will be a benefit to your program, and further has all the tools she needs to take full advantage of all Cambridge has to offer. I give Ronja Olsen my highest recommendation.

Sincerely,

A handwritten signature in black ink that reads "Benjamin A. Burrington". The script is fluid and cursive, with the first name being the most prominent.

Benjamin A. Burrington, Ph.D.
Associate Professor of Physics
Dept. of Physics and Astronomy
Hofstra University

We thank you for your time spent taking this survey.
Your response has been recorded.

Below is a summary of your responses

[Download PDF](#)

Institute of Astronomy

Important: please read before continuing

In this form, you will be asked a series of questions to help us gather information about your **previous** university study. The questions relate to your previous study, not the course that you are currently applying to. Depending on department procedures, relevant contextual data may have a small impact on some funding opportunities, so if your application is eligible for University funding, we encourage you to fill in this form.

You will be given the opportunity to tell us about any events or circumstances that have had an impact on your education, and limited your ability to perform in your studies. **You do not need to provide personal or detailed information about these circumstances**, we only ask you give details of the **impact** that they have had on your studies.

Please only provide the information that you are asked for in the form, and leave the text box blank if you cannot/ do not wish to respond. You should only provide information in the form if you feel comfortable to do so. Your application will not be disadvantaged if you choose not to respond to the questions, and your academic merit will be assessed based on the information you provide in other parts of the application. Once you have completed this form, you will need to download a PDF copy of your answers to upload to the [applicant portal](#). You will be given the option to download the PDF at end of the form, and you will also receive a copy by email. This

the PDF at end of the form, and you will also receive a copy by email. This will be sent to you as soon as the form is submitted.

Your first name:

Ronja

Your surname:

Olsen

Your email address:

ronjamartine6868@gmail.com

Confirm your email address:

ronjamartine6868@gmail.com

The following questions relate to your experience of studying at undergraduate/ bachelor's level.

Your undergraduate/ bachelor's institution:

Hofstra University

Did you undertake your degree full-time or part-time?

☒ **Full-time**

☐ Part-time (for any part of the degree)

When choosing your university, were there any factors other than grades that you felt limited your choice of institution?

e.g. not being able to live away from home, financial considerations, concerns about fitting in

I am from Norway but was a high school exchange student in the US when covid-19 threw the world into a frenzy. As a result, my exchange program wanted me to return to Norway, but I refused in order to be able to take my AP exams and receive the college credits I had worked for. As a result, I was allowed to withdraw from the exchange program and stay in the US on the condition that I graduate from my American high school and apply to college in the States (I was originally going back to Norway to complete my last year of Norwegian high school). Since this all went down in March 2020, I was only able to apply to schools with rolling admission. Thus, I didn't get the chance to apply to most of the schools I had prepared to apply to the year after.

Characters remaining: 244

Did you have any essential regular commitments that impacted the extent to which you could dedicate yourself to your studies? If so, please explain the impact of this on your studies.

e.g. caring responsibilities, being a single parent or guardian, employment during studies

I have worked two on-campus tutoring jobs since Spring 2022. While this is a job I thoroughly enjoy, I have also gotten into the habit of working overtime to help struggling students. This means, I have had less time for my studies in the last few years, which has made me develop more efficient study habits to maintain my grades.

Characters remaining: 669

Did you experience any serious disruption to your studies that prevented you from studying for at least 3 months over the course of a year? If so, please explain the impact of this on your studies. It is not necessary to provide details about the nature of the disruption.

e.g. illness, bereavement

N/A

Characters remaining: 997

The following questions relate to your previous experience of university study at all levels (undergraduate and/or postgraduate).

Some students get off to a slower start than others in their studies, and later show an upward progression in their marks.

Were there any circumstances that you feel initially inhibited your academic performance? If so, please provide details of the impact on your studies, and the change in circumstances that allowed you to improve your performance.

If anything, starting my studies in the Fall of 2020 provided the perfect environment for me to bunker down and focus on my studies right away since the social aspect of college was nearly nonexistent due to the pandemic. I have also always been a very dedicated and stubborn student, and know how to utilize my strengths to study efficiently, so I have experienced consistently high performance throughout my undergraduate studies.

Characters remaining: 567

Please use the space below to let us know about anything else that has had an impact on your studies or educational pathway. You might like to explain any incomplete qualifications or course changes.

I started as a Chemistry major and changed my degree twice before ending up with dual majors in Physics and Mathematics with a Chemistry concentration in addition to a Chemistry minor. These changes were the result of my trying to navigate where my strengths align the best with my academic and career interests, and due to how this impacted my schedule later on, I was not able to add an astronomy minor as I originally planned.

Characters remaining: 570

Ronja Martine Olsen

Education

2020-2024

Hofstra University, Hempstead, NY

- > Bachelor of Science: Physics, Minor: Chemistry
- > Bachelor of Science: Mathematics with concentration in Chemistry
- > GPA: 4.00/4.00 | Honors College | Graduation Date: May 2024

Skills and Certifications

*Software and
Programming*

- **Data Reduction and Analysis Software:**
The Common Astronomy Software Applications (CASA) | The Astronomical Image Processing System (AIPS).
- **Code:** *Python* – 2.5 years of experience designing scripts for observational radio astronomy data analysis.
- **Image Analysis Tools:** Cube Analysis and Rendering Tool for Astronomy (CARTA) | SAOImageDS9
- **Document/Data Processing Tools:** LaTeX (using TeXShop and Overleaf) | Excel | Word | PowerPoint etc.

Certifications

- **College Reading and Learning Association (CRLA):** International Level I, II, and III Master Tutor.
- **Activities:** Open Water Scuba Diver | Kayak Fundamentals Course | Kayak Technique Course
- **Python:** Fundamental Python Programming with Pirple.com (Summer 2021)

Languages

- **Norwegian** (Native) | **English** (Fluent) | **German/Swedish/Danish** (Conversational)

Research and Experience

*Fall 2021 –
Present*

Undergraduate Research Student: Hofstra University, Hempstead, NY

Advisor: Dr. Christina Lacey

- **Projects:** Evolution of SNR J1228+441 | Using radio-data to analyze galaxies NGC 6946, M83, and IC 342.
- **Goals:** Calibrated and imaged radio-frequency observations for the remnant/galaxies. Measured and analyzed the radio sources, comparing my new results with past results and other multi-wavelength surveys.
- Develop Python scripts to enhance data analysis and promote efficiency in a variety of research processes.
- Contribute to the generation of data and results that will be used in scientific publications and presentations.
- Gained expertise in using specialized software (CASA and AIPS) for radio astronomy data calibration and analysis, particularly data observed with the Karl G. Jansky Very Large Array (VLA), National Radio Astronomy Observatory.

*Fall 2021 –
Present*

Physics and Astronomy Tutor, Hofstra University, Hempstead, NY

Hofstra's Undergraduate Tutorial Program

- Facilitate student improvement in the comprehension of physics, encompassing algebra and calculus-based introductory physics, introductory astronomy, Modern Physics, Mechanics, and Electricity and Magnetism.
- Lead collaborative group sessions, accommodating drop-in attendance, and collaborating with 0-2 other tutors.
- Completed the optional International TUTOR Training Program Certification with CRLA, achieving Level I certification in Fall 2021, followed by Level II in Spring 2022, and attaining Level III in Fall 2023.
- Designed and delivered a successful procrastination workshop in Spring 2023 as part of CRLA certification journey, showcasing commitment to holistic student support.

*Spring 2022 –
Present*

Mathematics Tutor, Hofstra University, Hempstead, NY

Hofstra's Mathematics Tutoring Center

- Tutor students across a spectrum of lower-level math courses, including College Algebra, Linear Mathematics and Matrices, Elementary Set Theory, Logic and Probability, as well as Calculus I, II, and III.
- Facilitate group-based, drop-in sessions with the presence of 0-3 other tutors. Mostly assigned solo shifts.
- Assumed the role of mentoring and training new tutors over the past several semesters, shouldering the vital responsibility of familiarizing them with the inner workings of the tutoring center and their duties.
 - Entails conducting welcome meetings to provide guidance on center protocols and organizing multiple training sessions throughout the semester to equip them with knowledge and skills from unfamiliar courses.
 - Created comprehensive review materials for the various courses offered at the center.

Summer 2023
*June - September***Undergraduate Research Assistant:** Hofstra University, Hempstead, NY
Advisor: Dr. Christina Lacey

- Presented an iPoster at the 242nd American Astronomical Society (AAS) meeting, highlighting our research project on Supernova Remnant (SNR) J1228+441.
- Actively engaged in ongoing research related to galaxies NGC 6946 and M83, encompassing imaging, source detection, and the development of a comprehensive catalog utilizing radio data obtained from the VLA.

Summer 2022
*June - September***Undergraduate Research Assistant:** Hofstra University, Hempstead, NY
Advisor: Dr. Christina Lacey

- Continued and expanded the projects related to SNR J1228+441, M83, and NGC 6946, building upon prior research efforts with a focus on the new VLA observations for J1228+441.
- Developed Python scripts to facilitate future source analysis, utilizing Anaconda's Jupyter Lab with Astropy. These scripts included source matching programs, light curve fitting plots, spectral index sorting, and more.

Summers 2022, 2021 & 2018
*June - September***Cave Guide,** Setergrotta AS and Rana Spesialsport, Norway

- Led tourists on immersive excursions through an entirely natural extreme sports cave, situated a remarkable 1-kilometer underground. Frequently operated independently or in collaboration with a fellow guide.
- Took full responsibility for participant well-being and safety, and ensuring backup equipment was available.
- Delivered engaging and informative narratives about the cave and the surrounding region, proficiently communicating in Norwegian, English, and German to cater to diverse audiences.

Summer 2021
*June***Teacher:** Storforshei Summer School, Norway

- Prepared custom lesson plans for the entire three-week duration of the program.
- Instructed a diverse group of students spanning grades 5 to 10, offering educational insights in the fields of experimental science, programming, and dance.

Presentations and Publications

June 2023**iPoster Presentation, AAS 242nd Meeting, Albuquerque, NM**

Presented an iPoster at the 242nd American Astronomical Society (AAS) Meeting showcasing our research project on Supernova Remnant (SNR) J1228+441.

Olsen, R., & Lacey, C. (2023). The 50 Year Evolution of the Luminous Supernova Remnant J1228+441 in NGC 4449. Bulletin of the AAS. <https://baas.aas.org/pub/2023n6i205p03>

January 2024**iPoster Presentation, AAS 243rd Meeting, New Orleans, LA**

Our abstract for the 243rd AAS meeting, named “JVLA Low Frequency Radio Survey of M83”, has been accepted. I will be presenting this work in the form of an iPoster during the conference, which is held 7th -11th of January 2024 in New Orleans. In this presentation, we will present the outcomes of a comprehensive high-resolution radio survey, conducted at both 6 and 1.4 GHz frequencies, and compare with data from various complementary surveys and catalogs.

In Progress**Expected Publications**

Each of the four projects mentioned as part of my work as an Undergraduate Research Student (J1228+441, NGC 6946, M83, and IC 342) are anticipated to result in a paper within the next year. The J1228+441 article is in preparation while data from galaxies NGC 6946, M83, and IC 342 have been calibrated and imaged but are still undergoing analysis.

Leadership and Involvement

Fall 2020 – Present

Society of Physics Students (SPS)

- National Member, Hofstra's Chapter Vice President (21/22), Hofstra's Chapter President (22/23 and 23/24).

Student Members of the American Chemical Society (SMACS)

- Member of Hofstra's SMACS club, and ACS member 2020-2022.

Fall 2021 – Present

Rabinowitz Honors College Mentor, Hofstra University

- Mentor in the Lion and Cub peer mentoring program for freshmen in Hofstra's Honors College.

Fall 2022

Welcome Week Leader, Hofstra University

- Provided mentorship and guidance to a cohort of 15 first-year students during their crucial initial days on campus.
- Facilitated move-in and engaged students in activities to foster campus integration.
- Served as a key liaison, connecting students with vital campus resources for a smooth university transition.

Spring 2022

Sigma Pi Sigma, American Institute of Physics

- Inducted sophomore year of my academic journey, acknowledging my dedication and excellence in the field.

Fall 2022 – Present

Volunteering/Outreach Events, SPS (in collaboration with SMACS)

- Collaborated in the organization of Girl Scout conferences, actively contributing to the facilitation of women-led STEM workshops tailored to students in grades 4-8.
- Participated in the planning and execution of STEM demonstrations for the local daycare community. This encompassed engaging activities such as creating liquid nitrogen ice cream and constructing volcanoes.

Honors and Awards

Fall 2020 – Present

Provost List

Hofstra Presidential Scholarship

- Awarded to ~25% of Hofstra's admitted students based on GPA and/or SAT/ACT score.

Spring 2023

Homer & Mary Demetriou Endowed Scholarship

- Recognized as an outstanding mathematics major intending a professional career related to mathematics

Harold E. Clearman Endowed Memorial Award

- Achieving meritorious performance in coursework, along with an outstanding individual research project, as recommended by the faculty of the Physics and Astronomy Department.

HCLAS Academic Excellence Award Physics

- Nominated by the Physics and Astronomy Department for academic accomplishments and contributions to their department and the Hofstra community.

2023 ACS Undergraduate Award in Physical Chemistry

- Nominated by Hofstra's Chemistry Department for demonstrating excellence in physical chemistry and related fields based on research and coursework.

Summer 2022

CRLA Rick Sheets Outstanding Tutor Award

- Honored for contributing much to the academic success of my peers and motivate and inspire others through my dedication and passion in my work as an undergraduate student tutor. Awarded by the College Reading & Learning Association (CRLA), chosen from 1200+ programs.

Spring 2022

HCLAS Academic Excellence Award Physics

- Nominated by the Physics and Astronomy Department for academic accomplishments and contributions to their department and the Hofstra community.

Sylvia Pines Memorial Scholarship

- Awarded for being an outstanding female student with junior standing in recognition of my first completed course towards a mathematics major and my intent to pursue a professional career in science.