



RUTGERS
NEW BRUNSWICK

Physics and Astronomy
Quantum MS Program

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Director Center for Materials Theory

QI-MS Academic Program Welcome

Rutgers Physics & Astronomy Welcome Reception
for Graduate Students

August 27, 2025

Academic Program

General M.S. requirements from SGS / State of NJ:

- GPA of 3.0 (B) or higher, with up to 9 credits of C or C+.
 - GPA must be ≥ 2.5 up to 12 credits.
- Continuous registration (must be readmitted if you skip a term).
- 30 credits required for M.S.:
 - *MS with thesis* if 6 credits of research.
 - *MS with essay* if all coursework.
- Final examination:
 - Write thesis (essay), present to 4-member review committee, answer questions.

Academic Program

Detailed course work requirements are set by the department. There is some flexibility in coursework as we envision two separate tracks:

- Quantum Computing
- Quantum Materials

The following slides come from <https://physics.rutgers.edu/quantum-science-masters-program?view=article&id=2641:curriculum-and-research&catid=143>

Example Academic Program

Quantum Computing Focus

Year / Term	Fall (9 credits)	Spring (6 credits)
First	<ul style="list-style-type: none"> - Quantum Mechanics I - Quantum Computing Theory - Solid State I 	<ul style="list-style-type: none"> - Quantum Mechanics II - Quantum Computing Experiment <p>[prepare for internship & begin research]</p>
Second	<ul style="list-style-type: none"> - Quantum Algorithms - Machine Learning I - Research in Physics 	<ul style="list-style-type: none"> - Machine Learning II - Research in Physics

Example Academic Program

Quantum Materials Focus

Year / Term	Fall (9 credits)	Spring (6 credits)
First	<ul style="list-style-type: none"> - Quantum Mechanics I - Computational Physics - Solid State I 	<ul style="list-style-type: none"> - Quantum Mechanics II - Solid State II <p>[prepare for internship & begin research]</p>
Second	<ul style="list-style-type: none"> - Solid State III - Many Body Physics I - Research in Physics (3 credits) 	<ul style="list-style-type: none"> - Quantum Computing Experiment - Research in Physics (3 credits)

Rutgers Quantum Masters: Core Faculty

Core Faculty

Piers Coleman, Program Director



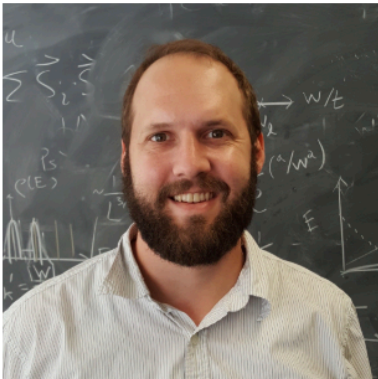
Piers Coleman



Kristjan Haule



Gabriel Kotliar



Jedediah H. Pixley



Srivatsan Chakram



Ananda Roy

Affiliated Faculty

- Premala Chandra
- Joel L. Lebowitz
- Karin M. Rabe
- David Vanderbilt
- Emil Yuzbashyan
- Mario Szegedy
- Yipeng Huang



Natan Andrei, Premi Chandra, Piers Coleman, Kristjan Haule, Gabriel Kotliar, Joel Lebowitz, Jed Pixley, Karin Rabe, David Vanderbilt, Emil Yuzbashyan and Ananda Roy

Rutgers Quantum Masters: Research Opportunities.



Eva Andrei, Girsh Blumberg, Jak Chakhalian, Srivatsan Chakram, Sang Cheong, Sean Oh, Vitaly Pozdorov, Shaowen Chen.

Our talented faculty is waiting to work with you on in-house research, both theory and experiment.

Internship Opportunities in Quantum Materials & Quantum Computing

Quantum Computing

Nord Quantique

<https://nordquantique.ca/en/home>

Atlantic Quantum

<https://atlantic-quantum.com/>

Northrop Grumman

<https://www.northropgrumman.com/what-we-do/disruptive-concepts-and-technologies-quantum-technology>

IBM Quantum

<https://www.ibm.com/careers/internships>

Google Quantum AI

<https://quantumai.google/team>

Quantum Materials

Pre-doc Summer internships at the
Center for Computational Quantum Physics.

National Lab Internships:

Brookhaven, Fermi Lab, Los Alamos, Argonne, Berkely, Livermore

International Collaborations:

E.g. Europe (UK, France, Germany, Portugal), India, Japan....

Thank you

Questions?