



NM Partnerships

A component of Sandia's University Partnerships Program



**Sandia
National
Laboratories**

Announcing the Quantum New Mexico (QNM) Institute

QNM-I



| QUANTUM NEW MEXICO >

New Mexico is a Quantum State

Joint Partnership between SNL Academic Programs and UNM CQuIC

Sandia Team Lead

Setso Metodi

Manager | Quantum Computer Science

UNM Team Lead

Ivan Deutsch

Regents' Professor | Physics & Astronomy
Director | CQuIC

QNM-I: Objective & Vision



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Objective: Develop a world-class research institute that builds on the historically strong SNL-UNM QIS foundation:

- Expand research & development in QIS technologies
- Support education, training, and workforce development
- Foster the creation of multi-institution research centers
- Build a stronger scientific foundation that integrates key aspects of QIS
- Meet the nation's economic and national security goals in QIS

Why: QNM Institute will raise our national profile

- QIS is among the top priorities for US S&T Investment, and further opportunities for funding are arising. We have a common interest in remaining competitive in this field.

How: Leverage our existing collaborations and model QNM-I after successful joint quantum centers: CU Boulder/ NIST partnership (JILA) & UMD/ NIST Partnership (JQI)

A Strong UNM/SNL Partnership



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2005
UNM helps
Sandia launch its
QIS program
Short Course in QI



• Joint UNM/SNL research in QIS



- LDRD 2010 Grand Challenge: AQUARIUS
- Multiple Current AA LDRD contracts and other funded projects:
 - T. Albash (UNM/ECE) & A. Baczewski (SNL, 1425)
 - V. Acosta (UNM/CHTM) & J. Henshaw et. al (SNL, 1882)
 - I. H. Deutsch (UNM/Physics) & Y.-Y. Jau (SNL, 5228)
 - D. Kapur (UNM/CS) & W. Witzel and M. Sarovar (SNL, 1425, 8739)
 - J. Plusquellic and E. Tsiropoulou (UNM/ECE) & D. Stick and D. Lobser (SNL, 5225)
 - 2020 Capstone: UNM part of \$115M NQI/QSA Center led by LBNL & SNL
 - Quantum Summer School (Jake Douglas, Megan Ivory)



• Sandia Adjuncts and Research Faculty supervise dissertation research in QIS

M. Brickson (Baczewski); T. Scholten (Blume-Kohout); A. Hankin, A. Orozco, A. Rakholia; (Biedermann); M. Curry (Carroll); J. Anderson, C. Cesare, B. Chase, B. Morrison, C. Ryan-Anderson (Landahl); Chow(Jau/Clark); J. Bainbridge, K. Campbell (Schwindt); B. Tabakov (Stick)

• Sandia Support for joint QIS activities:

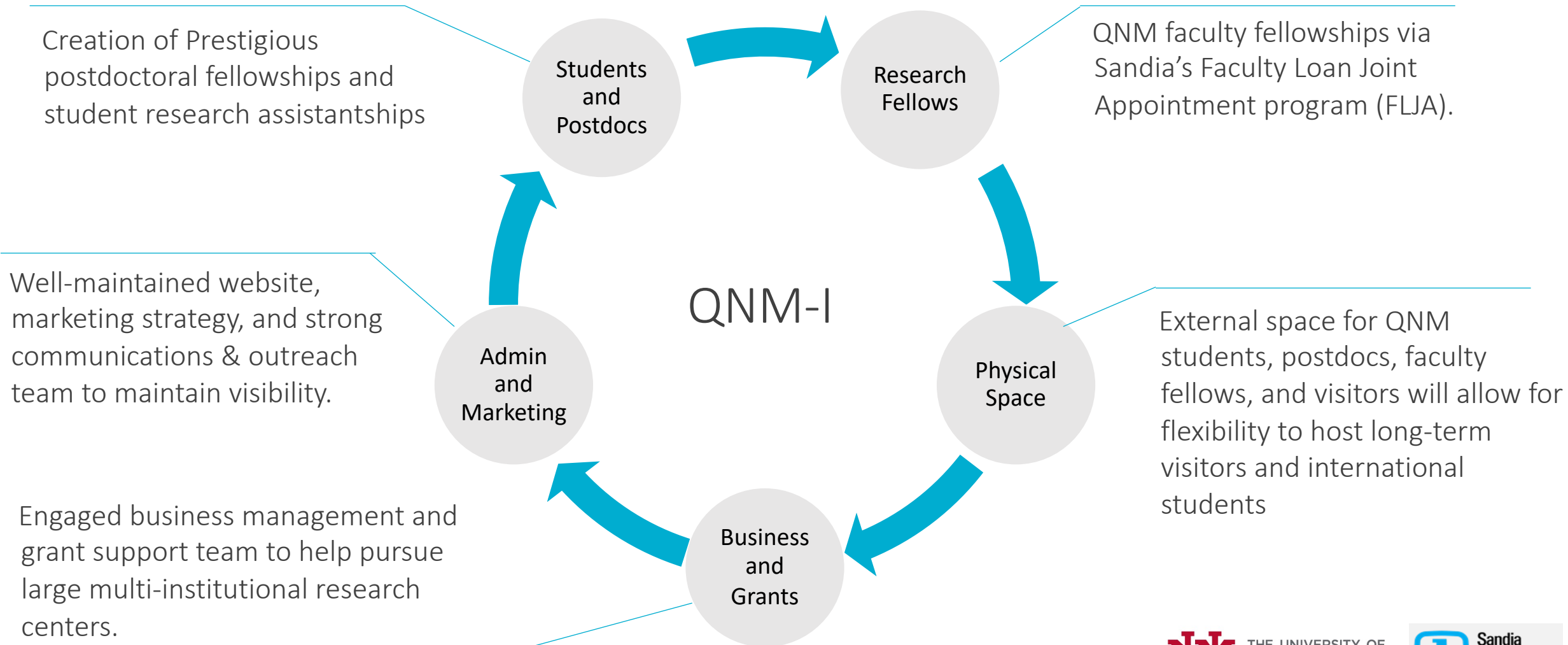
Southwest Quantum Information and Technology (SQuInT)



Key Elements to Success



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QNM-I: People and Governance NM Partnerships

The QNM-I will be governed under a joint agreement of a MOU to be agreed upon between SNL and UNM. Draft structure is proposed here:

Oversight Board

SNL head of Academic Programs or designate
SNL Chief Research Officer or designate
UNM Special Assistant to the Provost for
Laboratory Relations or designate
UNM Vice President for Research or designate

Overseas operations; Substantial issues
facing the QNM Institute; Budget and
allocation

Executive Committee

Co-Director (SNL, UNM)
Assistant co-Director (SNL, UNM)
Industrial Affairs and Economic
Development Director (SNL, UNM)

Day-to-day operations of QNM-I

QNM Fellows

Faculty at UNM and
staff scientists &
engineers at SNL

Scientific Direction;
furtherance of goals;
carrying out of work

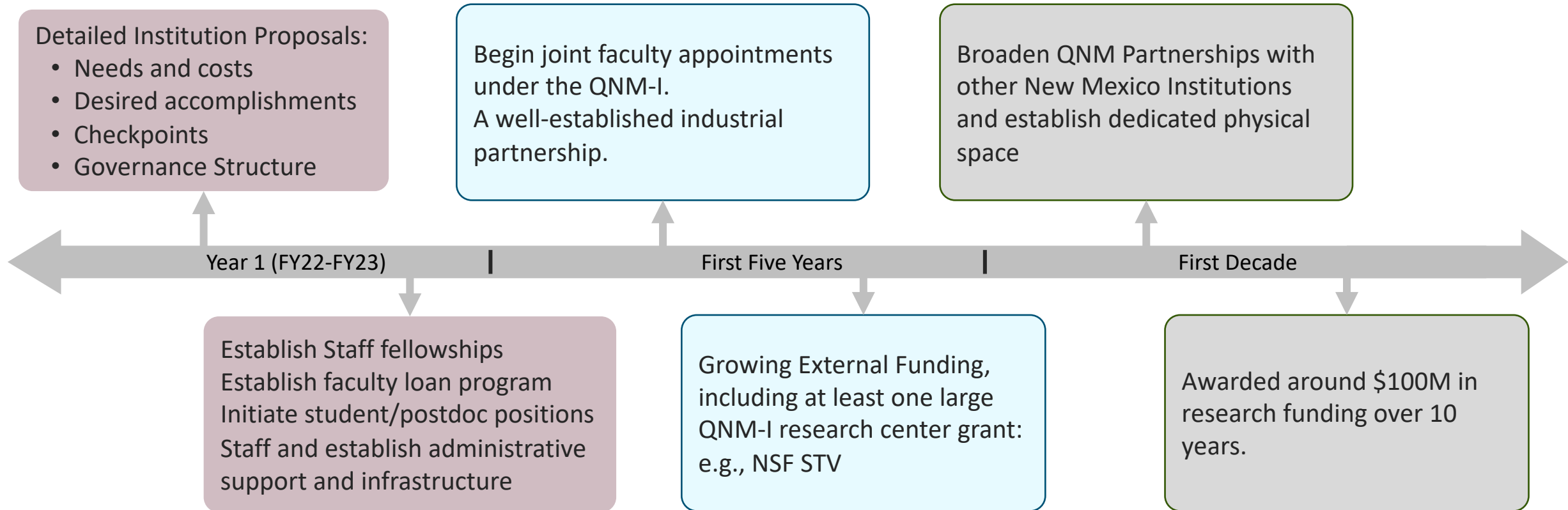
All responsible parties, relationships, and collaborations will be represented on our website once it's created.

Key Point: Each institution will be represented equally across all governance structures

QNM-I: Next Steps, Involvement



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Get Involved: contact us: Setso (tsmethod@sandia.gov) or Ivan (ideutsch@unm.edu)