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SENATE RESOLUTION

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WHEREAS, Illinois' microelectronics and quantum ecosystem can pave the way for solving innovation and national security challenges for the nation; and

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WHEREAS, Illinois is home to Fermi National Accelerator Laboratory, which received \$115M from the U.S. Department of Energy to establish the Superconducting Quantum Materials and Systems Center; and

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WHEREAS, Illinois is home to Argonne National Laboratory, which received \$115M from the U.S. Department of Energy to support Q-NEXT, an effort that will translate quantum discoveries into technologies that benefit society; and

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WHEREAS, The University of Illinois Urbana-Champaign received \$25M from the National Science Foundation for a Quantum Leap grant to advance scientific, technological, and workforce development goals; and

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WHEREAS, The University of Chicago received \$25M from the National Science Foundation for a Quantum Leap Grant to pioneer new ways to use quantum technology in biology and to develop the quantum workforce through STEM education and outreach; and

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1 WHEREAS, Illinois is a national leader with \$280M in
2 federal funding for quantum initiatives supported by the 2018
3 National Quantum Initiative Act; and

4 WHEREAS, The Chicago Quantum Exchange, one of the largest
5 quantum collaboratives in the country, leads efforts to
6 advance the science and engineering of quantum information,
7 train the quantum workforce of tomorrow, and drive the local
8 and national quantum economy; and

9 WHEREAS, The University of Chicago's Polsky Center, the
10 University of Illinois Urbana-Champaign, and the Chicago
11 Quantum Exchange launched the nation's first quantum startup
12 accelerator, Duality, which supports quantum startups,
13 providing the critical resources they need to develop and
14 scale their businesses; and

15 WHEREAS, The State of Illinois invested \$200M in
16 quantum-related research efforts at the University of Chicago
17 and the University of Illinois Urbana-Champaign, which will
18 help support a joint research building within Chicago; and

19 WHEREAS, Illinois has the third-highest number of
20 universities engaged in quantum research and has the
21 third-most quantum degrees in the nation; and

1 WHEREAS, Illinois' Community College System is the
2 third-largest system in the nation and the largest workforce
3 development provider in the State, offering programs that are
4 directly aligned with the needs of their local and state
5 industries serving the needs of nearly 10,000 employers across
6 the State; and

7 WHEREAS, An Illinois-based proposal was selected as a 2023
8 U.S. Tech Hubs Designee for Quantum by the U.S. Economic
9 Development Agency, a program that aims to strengthen U.S.
10 economic and national security with investments in regions
11 across the country with assets and resources with the
12 potential to become globally competitive in the technologies
13 and industries of the future and, for those industries,
14 companies, and the good jobs they create, to start, grow, and
15 remain in the United States; and

16 WHEREAS, The State invested \$500 million to establish the
17 Discovery Partners Institute and the Illinois Innovation
18 Network led by the University of Illinois System to establish
19 a network of research and innovation hubs that will serve as a
20 magnet for technology and talent; and

21 WHEREAS, A University of Illinois Chicago-led, U.S.
22 Department of Energy-funded national consortium will educate

1 the next generation of quantum engineers and provide pathways
2 into the quantum computing workforce for groups traditionally
3 underrepresented in STEM fields; and

4 WHEREAS, The National Science Foundation-funded National
5 Q-12 Education Partnership, led by University of Illinois
6 Urbana-Champaign, will expand access to K-12 quantum learning
7 tools and inspire the next generation of quantum leaders; and

8 WHEREAS, Since 2017, Illinois quantum startups have raised
9 \$33.2 million through 27 agreements, the second-highest number
10 of deals by quantum startups in the country; and

11 WHEREAS, Chicagoland's 124-mile quantum loop is the
12 country's longest quantum network; and

13 WHEREAS, Illinois has the world's first publicly
14 accessible quantum network node, the first quantum technology
15 deployed on public infrastructure that the public can directly
16 access at the Urbana Free Library, led by faculty from the
17 University of Illinois Urbana-Champaign; and

18 WHEREAS, The University of Illinois Urbana-Champaign's
19 Grainger College of Engineering has more combined computer
20 science, computer engineering, and electrical engineering
21 bachelor's graduates than any other college of engineering in

1 the nation and is starting a new semiconductor minor program;
2 and

3 WHEREAS, The University of Illinois Urbana-Champaign and
4 the University of Chicago are each co-leading new U.S.
5 Department of Defense Microelectronics Commons Hubs to carry
6 out microelectronics research in support of national security
7 and next generation technology for the benefit of the nation;
8 and

9 WHEREAS, The Grainger College of Engineering at the
10 University of Illinois Urbana-Champaign has 40 top ten ranked
11 degree programs and specialties, including micro-electronics
12 disciplines; and

13 WHEREAS, John Bardeen, the inventor of the transistor,
14 perhaps the most important invention of the 20th century,
15 brought semiconductor research to University of Illinois
16 Urbana-Champaign and the State of Illinois; and

17 WHEREAS, The University of Illinois Urbana-Champaign's
18 Grainger College of Engineering is the place where the
19 inventors of the LED, transistor, and the integrated circuit
20 called home; and

21 WHEREAS, Illinois has enacted The Manufacturing Illinois

1 Chips for Real Opportunity Act (MICRO), which creates a new
2 suite of statewide tax incentive programs for makers of
3 semiconductors, microchips, or component parts, making
4 Illinois a welcoming and strategic location for manufacturers
5 of microchips and semiconductors looking for their next U.S.
6 manufacturing site; and

7 WHEREAS, Illinois universities received a National Science
8 Foundation Future of Semiconductors Workforce Grant to boost
9 new semiconductor technologies, manufacturing, and workforce
10 training and development in the State and across the nation;
11 and

12 WHEREAS, The U.S. Department of Energy invested over \$22M
13 in Fermilab and Argonne for microelectronics research; and

14 WHEREAS, Companies have invested \$90M in University of
15 Illinois Urbana-Champaign's IBM-Illinois' Discovery
16 Accelerator Institute to support research and education in AI,
17 cloud, and quantum technologies and \$5M in educational
18 programs at University of Illinois Urbana-Champaign to bolster
19 the U.S. semiconductor workforce; therefore, be it

20 RESOLVED, BY THE SENATE OF THE ONE HUNDRED THIRD GENERAL
21 ASSEMBLY OF THE STATE OF ILLINOIS, that we congratulate and
22 thank all those who continue to advance innovative technology

1 in Illinois; and be it further

2 RESOLVED, That suitable copies of this resolution be
3 delivered to President Joseph R. Biden, U.S. Secretary of
4 Commerce Gina Raimondo, National Institute of Standards and
5 Technology Director Laurie E. Locascio, University of Illinois
6 President Timothy L. Killeen, University of Chicago President
7 Paul Alivisatos, Illinois Community College Board Chair
8 Dr.Lazaro Lopez, and all members of the Illinois Congressional
9 Delegation.