No. 09-1159

IN THE

Supreme Court of the United States

BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY,
Petitioner,

v.

ROCHE MOLECULAR SYSTEMS, INC. ET AL.,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF THE NATIONAL VENTURE CAPITAL ASSOCIATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

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BRIEF OF THE NATIONAL VENTURE CAPITAL ASSOCIATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

Amicus curiae respectfully submits this brief in support of petitioner, with the written consent of the parties.[1]

INTEREST OF *AMICUS CURIAE*

The National Venture Capital Association (NVCA), comprised of more than 400 member firms, is the premier trade association for the U.S. venture capital industry. Its members invest in emerging growth companies that strive to bring cutting edge technologies to the market. NVCA's members make venture investments across all industry sectors and at various points in companies' life cycles. As a result, NVCA and its members have witnessed first-hand the importance of the Bayh-Dole Act's straightforward and predictable ownership rules across a broad range of companies and issues. NVCA's members include leading venture capital firms and venture capitalists supportive of this brief, including: William K. Bowes, Jr.; Domain Associates; William H. Draper; Institutional Venture Partners; Interwest Partners; Franklin P. Johnson; Kleiner Perkins Caufield and Byers; Menlo Ventures; Mohr Davidow

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[1] Letters of consent have been filed with the Clerk. No party or counsel for a party to this case authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person or entity other than members of or counsel for *amicus curiae* has made a monetary contribution to the preparation or submission of this brief.

Ventures; Scale Venture Partners; Sequoia Capital; Sigma Partners; and Sutter Hill Ventures.

The venture capital industry, represented by the NVCA, is and has been for many years a principal driver of innovation and growth in the United States economy. It has spawned new industries and led to pioneering and life-changing innovation in biotechnology, health care, software, semiconductors, telecommunications, computer science and communications systems and devices—innovations which have enabled this nation to be the world's economic leader. The names of many successful venture-backed companies are well known: Microsoft and Apple, Genentech and Amgen, Gilead, Google, and Yahoo!, Network Appliances and nVidia, Oracle and Peoplesoft, Cisco and Adobe, eBay and Amazon.

The venture capital industry, and the entrepreneurs and inventors they back, keep the United States at the cutting edge of economic change. It is that group which translates advances in science and technology at our universities into jobs and improved services and health care for people worldwide. Many of those entities were started with university licenses of technology and inventions.

The venture capital industry has a significant interest in this case because the Federal Circuit's decision, if allowed to stand, would tend to discourage private investment in the development and commercialization of federally funded research ideas, and to frustrate the business community's collaborative efforts with nonprofit and university recipients of federal funding.

INTRODUCTION AND SUMMARY

Amicus submits this brief to bring to the Court's attention two significant practical concerns raised by the Federal Circuit's decision below. Both concerns grow out of the extensive experience of *amicus*'s members with the process of developing federally funded research ideas into commercially valuable products and services.

First, the Federal Circuit's decision would tend to discourage venture capitalists and established companies from committing the "risk capital necessary to develop [federally funded] inventions to the point of commercial application." H.R. Rep. No. 96-1307, pt. 1, at 3 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6460, 6462. The Bayh-Dole Act has facilitated such investment because it has long been understood to create a clear and predictable ownership framework. The decision below undermines that framework, however, leaving in its place a regime under which venture capital firms cannot easily determine who holds the rights to a federally funded research idea. This uncertainty would discourage the commitment of the risk capital needed to develop and commercialize raw research ideas.

Second, the decision below would tend to stifle cooperative efforts between the business community and university faculty. If, as the Federal Circuit held, individual researchers (faculty, post-doctoral students, or other graduate students) may assign away the rights to future inventions, universities might restrict and police the activities of those researchers in order to protect the ownership of the patents, instead of encouraging technology transfer

through faculty-industry interaction contemplated by the Act. Moreover, the decision could discourage successful former startups and established companies from funding research and development in academia through sponsored research agreements. Companies' participation in these cooperative ventures is contingent on the integrity and clarity of their licensing and assignment arrangements with universities.

ARGUMENT

A. The Federal Circuit's Decision Would Discourage Private Investment In The Development And Commercialization Of Federally Funded Research Ideas

In enacting the Bayh-Dole Act, Congress sought to encourage the commitment of risk capital to the development and commercialization of inventions arising out of federally funded research. Over the past three decades, *amicus*'s members have helped to make Congress's vision a reality. This has been possible because the Act was long understood to establish a straightforward and predictable ownership framework. Under that framework, the universities and other nonprofits conducting federally sponsored research may, on behalf of themselves and the researchers, negotiate licenses with venture-backed companies willing to invest in those inventions as needed for commercialization.

The Federal Circuit's construction of the Act, however, clouds the ownership of federally funded inventions, and thus clouds the enforceability of the licenses. The Federal Circuit's approach allows the side agreements of individual co-inventors to trump

the statutory ownership rights of universities and other nonprofit research institutions. The resulting uncertainty would discourage venture capital firms and established companies from investing in the process of bringing government funded research to the market.

1. a. A central purpose of the Bayh-Dole Act was to "encourage . . . the commitment of the risk capital necessary to develop [federally funded] inventions to the point of commercial application." H.R. Rep. No. 96-1307, pt. 1, at 3, *reprinted in* 1980 U.S.C.C.A.N. at 6462. Private investment is essential because invention "is in many ways the easy bit"; by a recent estimate, a "dollar's worth of academic invention or discovery requires upwards of $10,000 of private capital to bring to market," meaning that "companies that license ideas from universities wind up paying over 99% of the innovation's final cost." Opinion, *Innovation's Golden Goose*, The Economist, Dec. 12, 2002, at 3. In the experience of *amicus*'s members, development and commercialization of raw research ideas can cost hundreds of millions of dollars or more.

Venture capital firms play a critical role in committing that essential private capital to promising companies devoted to developing and commercializing inventions arising out of federally funded research.[2] These startup companies obtain licenses

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[2] "Venture capital," sometimes referred to as "risk capital," is an "important source of financing for start-up companies or others embarking on new or turnaround ventures that entail some investment risk but offer the potential for above average future profits." *Barron's Fi-*

(normally exclusive, except where fundamental advances are made, which can attract risk capital even with nonexclusive licenses) from universities and nonprofit research institutions, and they are able to attract venture investment as a result. These efforts lead to the formation of new companies and high paying jobs. Established companies also acquire exclusive licenses from universities and other nonprofit research institutions, and then use their own resources and in-house capacity to develop the federally funded inventions and bring them to market.

This substantial commitment of private capital has been possible because of the Bayh-Dole Act's clear and predictable ownership framework. That framework, as Senator Birch Bayh has explained, "was straightforward and easy to understand. Universities and other nonprofit research institutions would retain ownership of the ideas they developed through government funded research. They could license such patented ideas to industry at large for commercialization and would receive royalties." Senator Birch Bayh, Speech at the Licensing Executives Society 2006 Annual Meeting, *Bayh-Dole: Don't Turn Back The Clock* (Sept. 12, 2006), *reprinted in* les Nouvelles, at 216 (Dec. 2006), *available at* http://mirror.lesi.org/BirchBayh/Bayh.pdf. In light of this predictable rule, a startup company holding an exclusive license from a university, for example, could easily prove that the ownership of its license was valid simply by pointing to its agreements with the university. No further inquiry or investigation

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nance & Investment Handbook 945 (7th ed., John Downes & Jordan Elliot Goodman eds., 7th ed. 2007).

was required. As a result, venture capital firms have been able to invest in startups with sound business plans, without worrying about whether those plans are premised on licenses of technology of questionable ownership. Likewise, licensees could devote substantial time and resources to developing and commercializing federally funded research, without worrying about whether the nonprofit that granted them an exclusive license actually owned the invention it purported to license.

This licensing certainty is highly significant to *amicus*'s members. Venture capital firms (and established companies) that invest in the commercialization of federally funded research ideas *already* take on a significant amount of investment risk. As an initial matter, they assume the risk that their resources could have been better invested elsewhere. At the back end, they face the risk that the product they have helped bring to market will not fare well in that market or might not work as hoped, or that the underlying invention will turn out not to have been patentable. Different products also entail various types of regulatory risk. For instance, investments in pharmaceutical innovation face the risk that the new products ultimately will not survive the Food and Drug Administration's extensive approval process. And venture capital firms always face the risk that a startup company will not succeed for any number of reasons. If venture capitalists must also fear that the licenses on which business plans and funding judgments are made will turn out to be unenforceable because of questions about ownership, they will be much more likely to conclude that the other risks are not worth taking.

The Congress that passed the Bayh-Dole Act was well aware of the importance of the Act's simple and predictable ownership rules in encouraging private investment. Congress recognized that the key to "encourag[ing] private industry to utilize government funded inventions through the commitment of . . . risk capital" was to replace the then-existing "melange of 26 different agency policies on vesting of patent rights in government funded research [with] a single, uniform national policy." H.R. Rep. No. 96-1307, pt. 1, at 3, *reprinted in* 1980 U.S.C.C.A.N. at 6462; *see also id.* at 2, *reprinted in* 1980 U.S.C.C.A.N. at 6461.

b. An important feature of the Act's uniform ownership framework has been its placement of a right to elect ownership in the hands of universities and other nonprofits who receive federal funds, rather than in the hands of individual inventors. The nonprofits can grant reliable exclusive licenses in a manner that multiple individual inventors (who may not remember all of the contracts they have signed over the years, and may not have been as careful about signing them) simply cannot. *See infra* A.2.a. In particular, universities—which perform most of the nation's basic research and which cover most of their research expenditures using federal funds[3]—have proved highly capable of allocating exclusive licenses to promising companies.

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[3] *See* Association of American Universities, *University Research: The Role of Government Funding* 1 (May 2006), *available at* http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=1122 (in 2007, universities performed 54% of U.S. basic research); Association of Uni-

It was evident by 1980 that universities had been successful in licensing their portfolios of patents arising out of private funding to startups and other companies. At that time, "the Federal Government held title to approximately 28,000 patents of which fewer than five percent were licensed to companies for commercialization into products." *The Bayh-Dole Act—the Next 25 Years: Hearing Before the Subcomm. on Tech. and Innovation of the H. Comm. on Science and Tech.*, 110th Cong. 12 (July 17, 2007) (prepared statement of Arundeep S. Pradhan) ("Pradhan statement"). In sharp contrast, "[u]niversities . . . which can offer exclusive or partially exclusive licenses on their patents if necessary, ha[d] been able to successfully license 33 percent of their patent portfolios." S. Rep. No. 96-480, at 2 (1979). For that reason, it was understood that "federal government policies that prohibited universities from owning these patents and leasing them to businesses killed the incentives necessary for innovative companies to fully develop these new ideas." Sen. Bayh, *supra*, at 216.

Their proven track record encouraged Congress to grant universities and other nonprofit organizations the right to elect ownership in inventions arising out of federally funded research. Congress's judgment was that nonprofits would be effective cus-

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versity Technology Managers, *AUTM U.S. Licensing Activity Survey: FY 2008*, at 8, *available at* http://www.autm.net/AM/Template.cfm?Section=FY_2008_Licensing_Activity_Survey&Template=/CM/ContentDisplay.cfm&ContentID=4218 (in 2008, universities received $32.7 billion in federal funds, or 63% of total research expenditures).

todians of federal inventions, much as they had been with private inventions. *See* H.R. Rep. No. 96-1307, pt. 1, at 3, *reprinted in* 1980 U.S.C.C.A.N. at 6462.

Congress's judgment has proved prescient. Senator Bayh recently observed that the countless groundbreaking products that have sprung from federally funded research since the Bayh-Dole Act's passage include, as a small sample: "Cisplatin Citracal, [an anticancer agent and] a new treatment for Crohn's disease; recombinant DNA technologies; the nicotine patch; better monitoring of diabetes patients; techniques to reduce infant respiratory deaths; 3-dimensional surgery technologies; new crops; and even the Google search engine." *See* Sen. Bayh, *supra*, at 218. Congress itself has credited the Bayh-Dole Act with numerous other technologies, including "1) Magnetic Resonance Imaging (MRI), which was developed at the University of Wisconsin-Madison; 2) a lithography system to enable the manufacturing of nano-scale devices, which was developed at University of Texas-Austin; and 3) a new effective aneurysm treatment, which was developed at University of California, Los Angeles." H.R. Rep. No. 109-409, at 3 (2006). Other examples include "the Hepatitis B Vaccine (Fox Chase Cancer Center); New Therapeutics for Prostate Cancer (OHSU); [and] New Treatments for Heart Disease (Emory University)." Pradhan statement, 110th Cong. 13; *see also id.* (listing examples from Arizona, California, Oregon, and Nebraska).

Indeed, one recent study of university technology licensing from 1996 to 2007 shows that such licensing contributed $187 billion to the U.S. Gross National Product and $457 billion to gross industrial

output, using conservative models. In addition, university-licensed products commercialized by industry created at least 279,000 new jobs across the United States during the 12-year period. *See* Biotechnology Industry Organization, *The Economic Impact of Licensed Commercialized Inventions Originating in University Research, 1996-2007*, at 6-8 (Sept. 3, 2009), *available at* http://www.bio.org/ip/techtransfer/BIO_final_report_9_3_09_rev_2.pdf. Accordingly, "[d]espite the 'ivory tower' label sometimes attached to U.S. universities, this is now a gross misrepresentation of reality," as "our research universities have been among the most important economic institutions of the twentieth century." *Id.* at 14. In fact, other countries have recognized that "the university-industry collaborations found in the United States [are] a competitive advantage and [have] sought to duplicate the underlying conditions supporting these trends." *Id.*

Petitioner Stanford University has had a fruitful partnership with venture capital firms and innovative startups. For example, Dr. Dari Shalon developed an arraying technique while at Stanford that became the basis of DNA microarray technology. Dr. Shalon decided to launch a startup company called Synteni, and Stanford's Office of Technology Licensing (OTL) granted him an exclusive license to his invention and substantial assistance. The startup attracted $5 million in venture investment from NVCA member Kleiner Perkins Caufield & Byers, and ultimately was sold for $100 million to Incyte Genomics. *See* Intellectual Asset Management, *Licensing in the Boardroom: Key Licensing Issues for Senior*

Executives 14, *available at* http://www.iphandbook.org/jforum/posts/downloadAttach/351.page.

A more familiar example of the fruitful relationship between Stanford and venture capital firms concerns Google, Inc. In the fall of 1995, Sergey Brin and Larry Page began joint work on Stanford's Digital Library Project. That work ultimately led to the development of a search engine, which Brin and Page operated on Stanford's servers and disclosed to OTL in 1996. Two years later, after OTL had explored the possibility of partnerships with several internet companies, Brin and Page proposed to start a company of their own. "OTL discussed the prospect with them and decided Page and Brin would be good stewards of the technology, both because of Page and Brin's expertise and their vision for the technology's development." Rich Scholes, *Uniquely Google(TM)*, Stanford Tech. e-Brainstorm (Mar. 2000), *available at* http://infolab.stanford.edu/pub/voy/museum/google.htm. In June 1999, Google's first press release announced that NVCA members Sequoia Capital and Kleiner Perkins Caufield & Byers had invested $25 million in venture capital. Press Release, *Google Receives $25 Million in Equity Funding* (June 1999), *available at* http://web.archive.org/web/20000309205910/http://google.com/pressrel/pressrelease1.html.

2. The Federal Circuit's decision dismantles the very features of the Bayh-Dole Act that have facilitated the private investment necessary to commercialize inventions arising out of federally funded research.

a. As an initial matter, the Federal Circuit's interpretation of the Bayh-Dole Act undermines what market participants long assumed to be the Act's straightforward and predictable ownership framework. Under the decision below, individual inventors may strip nonprofits of their statutory right to retain ownership of an invention simply by assigning the rights to someone else. If just one co-inventor assigns his rights away—intentionally or otherwise—a nonprofit that subsequently elects to retain title would no longer be the sole owner of the federally funded invention. And if all co-inventors assign away their rights before the nonprofit has had an opportunity to elect title, the nonprofit would then be left with no rights at all.

This uncertainty about ownership necessarily translates into uncertainty about the validity of exclusive licenses. A nonprofit that is not the sole owner of an invention cannot by itself grant a startup company an enforceable exclusive license. *See Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1468 (Fed. Cir. 1998). And a nonprofit that has no rights to an invention cannot grant a startup company any license at all.

As a consequence, the Federal Circuit's decision would discourage venture capital firms and established companies from investing in federally funded research ideas. If venture capital firms cannot be confident that a startup company holds an enforceable exclusive license, they will be deterred from committing funds to the startup. And if an established company cannot be confident that its own exclusive license is enforceable, it will be deterred from committing its own resources and time. For as Con-

gress recognized when it enacted the Bayh-Dole Act, the "private sector simply needs more protection for the time and effort needed to develop and commercialize new products than is afforded by a nonexclusive license." S. Rep. 96-480, at 2.

Little could be done to remove the cloud that the Federal Circuit's decision would cast over licensing agreements. It would not be enough for a licensing nonprofit or licensee startup company to perform a costly investigation into the possibility that any co-inventor might have—perhaps inadvertently—assigned away rights. Given that individual inventors might have assigned *future* inventions long before any invention was conceived (as was the case here), the investigation would need to stretch back decades and exhume long-forgotten contracts. Furthermore, even if it were clear that all existing agreements had been found, the licensing nonprofit or licensee would still need to retain counsel to scrutinize the relationship between the various agreements and assess which agreement takes precedence.

b. The Bayh-Dole Act's ownership framework has been effective not only because it is straightforward and predictable, but also because it makes the universities and nonprofit research institutions—rather than individual inventors—the principal custodians of federally funded invention. As explained, *supra* A.1.b, university funding recipients have proved highly effective at allocating licenses in a manner facilitating the development and commercialization of critical technologies. Additionally, the work experience of the university technology offices ensures that licenses are properly structured and given for

fair compensation (such as equity and royalties) which in turn further supports research in the federally-funded institution. The Federal Circuit's decision would deprive funding recipients of their central role.

Under the Federal Circuit's regime, institutional repeat players, such as the technology transfer offices of universities, would no longer play the leading role in identifying promising companies to which to grant exclusive licenses. Instead, decisions about the ownership of inventions would be made through the ad hoc arrangements, both intentional and inadvertent, of individual researchers. And those decisions would effectively determine whether exclusive licenses could ever be obtained. For example, if four professsor co-inventors unwittingly assigned away their rights to four competitor companies, none of the companies would hold exclusive rights, none could grant an exclusive license, and none would have an incentive to make the substantial investments needed to develop and commercialize raw research ideas.

The Federal Circuit's decision therefore replaces the regime that has operated smoothly for the last three decades with a regime that bears a striking resemblance to the one the Bayh-Dole Act was designed to replace: one in which the uncertainty arising from a "melange of … different … policies on vesting of patent rights in government funded research" impeded the formation of risk capital. H.R. Rep. No. 96-1307, pt. 1, at 3, *reprinted in* 1980 U.S.C.C.A.N. at 6462; *see also id.* at 2, *reprinted in* 1980 U.S.C.C.A.N. at 6461.

B. The Federal Circuit's Decision Threatens To Stifle Cooperative Efforts Between Universities And Industry

The Bayh-Dole Act was also designed to encourage cooperative ventures between academia and the business community. *See* 35 U.S.C. § 200 (stating the Act's statutory purpose of "promot[ing] collaboration between commercial concerns and nonprofit organizations, including universities"). In the experience of *amicus*'s members, these cooperative efforts have flourished and been highly productive over the past three decades. The Federal Circuit's decision would threaten to frustrate this collaboration in two ways.

First, the decision below could discourage universities from allowing their faculty to contribute to work at private companies. Because individual professors could undermine a university's statutory right to elect ownership in inventions merely by signing an assignment agreement with a private company, universities may be well advised to limit the opportunities for this to occur.

Universities could, of course, demand that their employees assign them any future inventions before those employees are permitted to enter into cooperative ventures with outside companies. But they could not be confident that a court would give those agreements precedence over individual inventors' subsequent agreements; as this case demonstrates, a university's assignment agreement may be trumped by an individual inventor's later-in-time assignment to a private firm. And even if a university were confident in the primacy of its assignment agreements,

it could still be deprived of the ability to grant exclusive licenses if non-employees were successfully to claim co-inventor status to inventions borne principally out of the work of the university's own employee.

Second, the Federal Circuit's decision could discourage established companies from funding university research, and at a time when federal funding of university research may be decreasing. In the experience of *amicus*'s members, cooperative ventures of this sort have been fruitful in the decades following the enactment of the Bayh-Dole Act. By creating significant uncertainty about the ownership of inventions, however, the Federal Circuit's decision could stifle this cooperation. A company may be dissuaded from granting a university funds for research if were uncertain about the university's rights to inventions arising out of that research—and therefore unable rely on the licensing or assignment arrangements negotiated with the university in connection with the grant of funding.

CONCLUSION

For the foregoing reasons, the Federal Circuit's decision would not only hinder private investment in the process of commercializing federally funded inventions, but also stifle cooperative (and productive) efforts between the business community and universities. The Court should reverse the decision and restore the clarity intended by the Bayh-Dole Act's ownership framework.

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