



Testimony of:

**Jo Wiederhorn**

**President & CEO, Associated Medical Schools of New York (AMSNY)**

At a Joint Hearing of the New York State Assembly Committee on Economic Development, Job  
Creation and Industry  
& the New York State Senate Committee on Commerce, Economic Development and Small  
Business  
On the Executive Economic Development Budget

February 9, 2015

1:00 pm

Legislative Office Building

Albany, New York

Good afternoon, Chairman Boyle, Chairman Schimminger, Chairman DeFrancisco, Chairman Farrell and other distinguished members of the State Legislature. Thank you for this opportunity to testify on the proposed Executive Budget for fiscal year 2015-2016.

My name is Jo Wiederhorn, President & CEO of the Associated Medical Schools of New York (AMSNY), the consortium of the sixteen public and private medical schools in New York State. AMSNY works in partnership with its members to promote high quality and cost-efficient health care by ensuring that New York State's medical schools provide outstanding medical education, patient care and biomedical research.

The term academic medicine is widely used, and yet its true meaning often gets lost because support for academia and support for medicine are often separated. When combined, the term "academic medicine" has a much greater depth of meaning than its individual parts. The role of academic medicine is not only education nor the advancement of medical science. Rather, it is education and research that ultimately improves the health of individuals and communities.

This is not merely an ivory tower idea – our academic medical institutions admit students who, from their very first day, work in hospitals, clinics and laboratories. These students work alongside teachers and mentors to immediately begin applying their knowledge to help the communities within which they live and work. As Stephen Schroeder noted in an important article in the Journal of the American Medical Association, academic medicine constitutes a *public trust*, because it "is entrusted by society with the responsibility to undertake several important social missions toward improving the health of the public, including education, patient care and research."

I believe quite strongly that the role of medical education dovetails well with the role of government, which in my view, is to help its citizens and its communities thrive.

I am here today because both the economic and health outcomes of our communities are in need of your assistance. With your help, we can ensure that academic medicine continues to make a strong contribution to our economy, as well as advancing health within our communities.

We are grateful for the programs that were included in the Executive Budget that support academic medicine's role as a public trust, including continued funding for stem cell research and the Spinal Cord Injury Research Program. You'll hear shortly from Ross Frommer, my colleague from Columbia, who will provide a very concrete example of how State investment has grown jobs and led to health breakthroughs for residents of Washington Heights and for all New Yorkers. But first I would like to provide background information on the continued need for the

State to support a diverse physician workforce and on the importance of biomedical researchers to the health of New York State's communities.

#### AMSNY'S DIVERSITY IN MEDICINE PROGRAMS

Attached you will find two documents: AMSNY's 2013 Diversity Outcome Fact Sheet and our 2014 Update. In addition, you will find a description of the programs. As you'll note from our outcomes, these programs are **highly** successful. They enroll students who would not otherwise be accepted to medical school, and provide them with a year of academic enrichment, mentoring, research and support. Students who successfully complete the program are *automatically* accepted into the medical school that referred them. Three of our programs also provide Masters degrees. Again, I must stress, these are students who would not otherwise have been admitted to medical school. Of all our program alumni, 93 percent become physicians. By any measure, this is an astounding success rate.

Despite this, since 2008 we have lost 20 percent of our funding due to recession-related budget cuts. We have been forced to eliminate programs. In the 2015 budget, the Executive has proposed to either a) pool our diversity programs with seven other State-supported programs – many with widely different goals – and compete within that pool for funds; or b) cut our current funding by an additional 15 percent.

If we are required to compete through an RFP process for funds, **we will be forced to close our programs**. Certainly not because of poor outcomes, nor because our management:program funding ratio is poor (our 2014 audit confirmed that 91 percent of AMSNY's total budget directly supports programs and a mere nine percent goes toward management), but because **we begin enrolling students in our programs in Spring**. If we are uncertain whether and how much funding will be available, we simply cannot enroll students.

Moreover, if our funding is cut by an additional 15 percent, **our total cut between 2008 and 2015 will be 32 percent, or \$640,000**. We will again be forced to eliminate programs – AMSNY and its member institutions **simply cannot continue to absorb these reductions**. In fact, in a time when the State has a budget surplus it is, in my view, unconscionable that a program with such strong outcomes and with such a low management:program funding ratio, should be cut at all. I would argue, in fact, that our previous \$400,000 reduction should be restored in full. Training physicians who are culturally competent and ethnically and racially representative of all New Yorkers increases the likelihood that our citizens will visit their physicians and comply with treatments. This is a clear and proven way to improve health outcomes.

## THE NEED FOR STAR RESEARCHERS

A year ago a number of the deans of New York State's public and private medical schools and I came to Albany to discuss a concern we have regarding the potential poaching of star researchers from our medical schools to institutions in Texas, California, Massachusetts, Connecticut and Florida. I highlight these particular states because their governments understood the economic and health benefits of investing in a world-class biomedical research ecosystem. The concern we shared a year ago is now unfortunately a well-documented reality.

Each of the states I've mentioned has made a commitment of \$1 billion or more (Texas and California have each committed \$3 billion) towards growing a robust bioscience sector. Moreover, within those initiatives is the express goal of recruiting leading scientists from outside their states. New York, which has historically been a global leader in biomedical research (with 26 Nobel laureates in Medicine and Physiology) has become a prime target for such recruitment efforts. I would refer you to the list of 14 of our most established scientists and promising rising stars, who have recently been recruited to Texas alone. And Texas is not unique; in the past several years, states that have not had strong academic medicine programs – including Indiana, Iowa, Virginia and Utah – have launched state-funded programs, with similar intentions.

So I would return to my original premise: that there is a covenant between state government and its citizens, and that the role of government is to enable its communities to thrive.

The above-mentioned states have made such a commitment by supporting biomedical research. Last year thanks to your help, New York State reinstated its highly successful program to recruit star scientists whose innovations and entrepreneurship have demonstrably benefitted our health and our economy. Now the deans of New York State's medical schools ask that you again support this program with an investment that will allow us to maintain our global competitive advantage.

The Associated Medical Schools of New York (AMSNY) urges the State Legislature to strongly support the NYSTAR Faculty Development Program (FDP) and fund the program at **\$50 million** in the upcoming FY 2015-2016 budget.

Between 2002-2009, the Foundation for Science, Technology and Innovation (NYSTAR), a division of Empire State Development, sponsored the Faculty Development Program (FDP) in order to assist New York State research institutions in recruiting and retaining high profile and well-funded scientists.

The FDP had significant and measurable success. Over the course of its existence, approximately

\$36 million in grants were awarded to recruit top scientists who, due to their significant talent, were able to leverage an additional \$251 million in grant and philanthropic activity – a return of almost \$7 for every dollar invested.<sup>1</sup> Of the original 53 FDP awardees, 44 currently remain at New York State research institutions. This is notable, particularly because out-of-state recruitment for top scientists is a highly competitive enterprise.

### **Economic Impact of Investing in Star Scientists**

More broadly, state investments in the recruitment and retention of star scientists – those who lead their respective fields, have significant federal awards to support their work, and who have a proven record of translating their research into commercially viable products and companies – generate demonstrable positive returns.

A 2013 report by the National Bureau of Economic Research (NBER) finds that state subsidies for biotechnology employers raise the number of star scientists in that state by 15 percent over a three- year period. The study also finds that state support has direct effects on patent development, along with indirect effects (by increasing the patenting prolificacy of incumbent scientists in the state). Similarly, biotech incentives are associated with 10 to 18 percent increases in the number of biotech establishments. In sum, this NBER report, which focuses primarily on the strengths of R&D tax credits and biotech-specific tax incentives, suggests that the STARTUP-NY program will play a key role in growing the State’s bioscience sector.<sup>2</sup>

A subsequent 2014 NBER report focused more specifically on the role of hiring star scientists in influencing the productivity of their incumbent peers, and on the quality of subsequent recruits. This report finds that research output increases by 54 percent after the arrival of a star scientist; moreover, the output for incumbents (that is, after removing the direct contribution of the star) increases by 48 percent, indicating that star scientists significantly improve the productivity of their peers (some of which is attributable to engagement with the star through collaboration). Similarly, the report finds that the quality of subsequent recruits improves significantly (68 percent) after the arrival of a star scientist. This suggests that programs, like the FDP, that focus on the recruitment and retention of stars are critical to the growth of research ecosystems (and indeed, to the success of initiatives like STARTUP-NY that seek to leverage the output of academic institutions) – both by improving overall productivity, and by elevating the quality of

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<sup>1</sup> The return of \$251 million in economic activity is a pre-multiplier figure. It reflects total external research funding (NIH, NSF, philanthropy, etc.) FDP awardees received through 2009. Several other economic impact indicators (such as jobs created, revenue impact, royalty/licensing income, and capital projects) that contribute to an economic impact calculation that far exceeds \$251 million.

<sup>2</sup> Moretti, E. and Wilson, D. *State Incentives for Innovation, Star Scientists and Jobs: Evidence from Biotech*. National Bureau of Economic Research August 2013. Web: [eml.berkeley.edu/~moretti/biotech.pdf](http://eml.berkeley.edu/~moretti/biotech.pdf).

the scientists within the ecosystem.<sup>3</sup>

As I stated earlier, Mr. Frommer, will now provide you with a very concrete example of the good the FDP program has done for the State. Thank you very much.

#### AMSNY Member Institutions

- Albany Medical College
- Albert Einstein College of Medicine of Yeshiva University
- Columbia University College of Physicians & Surgeons
- Hofstra North Shore-LIJ School of Medicine of Hofstra University
- Icahn School of Medicine at Mt. Sinai Medical Center
- New York College of Osteopathic Medicine
- New York Medical College
- New York University School of Medicine
- Sophie Davis School of Biomedical Education at City College of New York
- State University of New York Downstate Medical Center
- State University of New York Upstate Medical University
- Stony Brook University Medical Center
- Touro College of Osteopathic Medicine
- University at Buffalo State University of New York School of Medicine & Biomedical Sciences
- University of Rochester School of Medicine & Dentistry
- Weill Cornell Medical College

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<sup>3</sup> Agrawal, A., McHale, J. and Oettl, A. Why Stars Matter. National Bureau of Economic Research. March 2014. Web: <http://www.nber.org/papers/w20012>.

# DIVERSITY IN MEDICINE, 2013

AMSNY supports programs across the educational continuum to expand the pool of students choosing careers in medicine and other health professions. The programs, which are mainly housed within New York State's medical schools, are supported through a grant from the State Department of Health, with additional financial assistance from the medical schools.

The goal of the diversity in medicine programs is to provide enrichment and support to students from groups underrepresented in medicine (URM) and/or educationally and economically disadvantaged backgrounds.

## POST-BACCALAUREATE & MASTERS DEGREE PROGRAMS

Participating medical schools refer students to AMSNY's post-baccalaureate programs through their competitive admissions process. They must provide conditional acceptance to the student in next year's class. The programs, which are tailored to each student's individual needs, provide coursework, financial assistance, mentoring, and comprehensive support services.

### MASTERS DEGREE PROGRAMS

In 2008, AMSNY began to sponsor the following programs:

MS in Interdisciplinary Medical Sciences

New York Medical College

MS in Physiology and Biophysics

Stony Brook University School of Medicine

MS in Medical Technology

SUNY Upstate Medical University



# 93%

of students who completed the Masters Degree programs have entered medical school

(DATA FROM 2008-2013)

### POST-BACCALAUREATE PROGRAM

The School of Medicine & Biomedical Sciences, University at Buffalo, SUNY

Since its inception in 1991, there have been 22 cohorts with a total of 375 students participating in the program (DATA FROM 1991-2013).



of students who entered the Post-Baccalaureate Program entered medical school.

**87%** of students who matriculated into medical school graduated

**55%** of MD graduates went into primary care residencies

**54%** stayed in New York for residencies

## DIVERSITY IN MEDICINE, 2013

In addition to the post-baccalaureate programs, AMSNY'S diversity in medicine initiative targets students in high school and college.

### LEARNING RESOURCE CENTER

Sophie Davis School of Biomedical Education at CCNY

The Learning Resource Center provides academic resources, skills, mentorship and support that will assist Sophie Davis students in pursuing their joint BS/MD degree.

# 100%

of students would recommend the Learning Resource Center's Pre-Matriculation Program to incoming classes.

More than

# 3,000

students have utilized the Learning Resource Center since 2008.

### PATHWAYS TO CAREERS IN MEDICINE AND RESEARCH

City College of New York

Students are mentored by National Institutes of Health (NIH) researchers, who help them develop and conduct independent research projects. At the conclusion of the program, research projects are presented locally and nationally.



## 78 students

- 36 MEDICAL SCHOOL
- 12 RESEARCH
- 11 PHD
- 9 MASTERS DEGREES
- 6 TEACHING
- 2 OPTOMETRY
- 2 PHYSICIAN ASSISTANTS

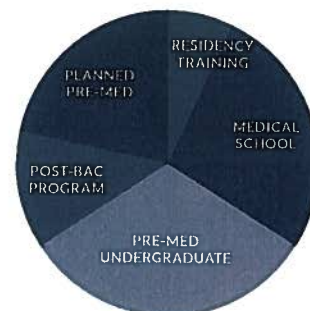
### PHYSICIAN CAREER PREP PROGRAM

Staten Island University Hospital

The program provides academic support, workshops, clinical shadowing and research opportunities, to encourage high school students to pursue careers in medicine and health.

## 68 students

- 15 MEDICAL SCHOOL
- 4 RESIDENCY TRAINING
- 18 PRE-MED UNDERGRADUATE
- 7 POST-BACCALAUREATES
- 12 PLANNED PRE-MED



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**amsny**  
Educate • Advocate • Collaborate

Associated Medical Schools of New York  
1270 Avenue of the Americas, Suite 606  
New York, NY 10020 | 212-218-4610

For more information, visit our website at [www.amsny.org](http://www.amsny.org) or email [info@amsny.org](mailto:info@amsny.org).



## Academic Year 2013-2014

# AMSNY DIVERSITY IN MEDICINE PROGRAMS

### Master's Degree Programs

School	Program Degree	% of students who completed program degree and matriculated into medical school
New York Medical College	Master's of Science (MS) Degree in Interdisciplinary Medical Sciences	100% ( 3 out of 3)
Stony Brook University School of Medicine	Master's of Science (MS) Degree in Physiology and Biophysics	100% (3 out of 3)
SUNY Upstate Medical University	Master's of Science (MS) in Medical Technology	75% (3 out of 4)

### Post-Baccalaureate Programs

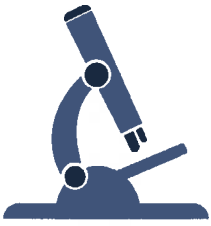
School	Number of Students	% of students who completed program and matriculated into medical school
The School of Medicine & Biomedical Sciences, University at Buffalo, SUNY, 23 <sup>rd</sup> cohort	22 students	96% (22 out of 23 students)

### Other Pipeline Programs

School	Program	Outcomes
The Sophie Davis School of Biomedical Education at CCNY	Learning Resource Center	<ul style="list-style-type: none"> <li>➤ 95% of students would recommend the Learning Resource Center's Pre-Matriculation Program to incoming classes</li> <li>➤ 385 students have utilized the Learning Resource Center this past academic year</li> </ul>
City College of New York	Pathways to Careers in Medicine and Research	<ul style="list-style-type: none"> <li>➤ 24 students were supported through this program</li> </ul>
Staten Island University Hospital	Physician Career Prep Program	<ul style="list-style-type: none"> <li>➤ 15 students were supported through this program</li> <li>➤ All students identified as pursuing pre-med majors</li> </ul>
Icahn School of Medicine at Mount Sinai	Post-Baccalaureate Research Education Program (PREP)	<ul style="list-style-type: none"> <li>➤ 11 PREP scholars were supported through this program</li> </ul>
Albert Einstein College of Medicine	Mentoring in Medicine Program	<ul style="list-style-type: none"> <li>➤ 42 students were supported through this program</li> </ul>

AMSNY Diversity in Medicine programs are supported through the New York State Department of Health.

# BIOMEDICAL RESEARCH IN NEW YORK STATE



New York State's research institutions have led the nation in major medical discoveries, with **23 Nobel laureates** in Physiology or Medicine, and breakthroughs in the fields of:

**23**

**NOBEL  
LAUREATES IN  
PHYSIOLOGY  
OR MEDICINE**

- Cardiac Care
- Oncology
- Diabetes
- Multiple Sclerosis
- Polio
- Lyme Disease
- Genetics
- Cell Physiology
- Virology
- Immunology
- Regenerative Medicine
- Neurophysiology

**16**

**PUBLIC AND PRIVATE MEDICAL  
SCHOOLS IN NEW YORK STATE**



**\$85+ billion  
in economic  
impact**

**\$7.5 billion  
generated  
by research**

SOURCE: TRIPP UMBACH 2010



New York is the **3rd largest recipient** of NIH funding.

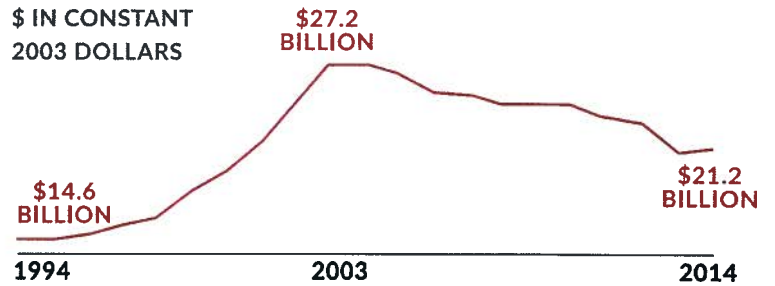
IN 2013:

- NIH awarded nearly **\$2 billion** to NYS researchers
- 176 NYS institutions were awarded **4,814 NIH grants**
- NIH funding alone supports more than **32,000 jobs** throughout the state

NIH FUNDING IN BILLIONS

SOURCE: NIH FY2013

But in the last decade, NIH's purchasing power has declined by nearly **25%**.

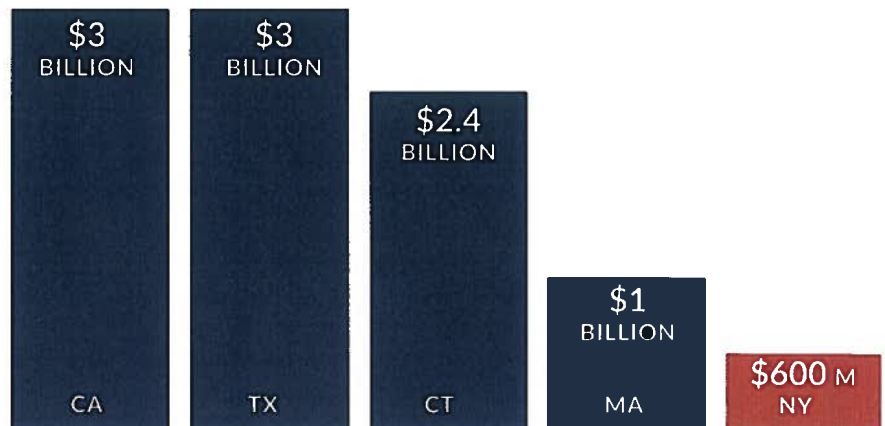


IN 2013:

Sequestration cuts cost New York State roughly **\$100 million** in lost NIH research funds – funding that will not be restored in future NIH budgets.

## STATE RESEARCH INVESTMENT

Recently, California, Texas, Connecticut and Massachusetts have led the nation in establishing major biomedical research initiatives to drive economic growth.

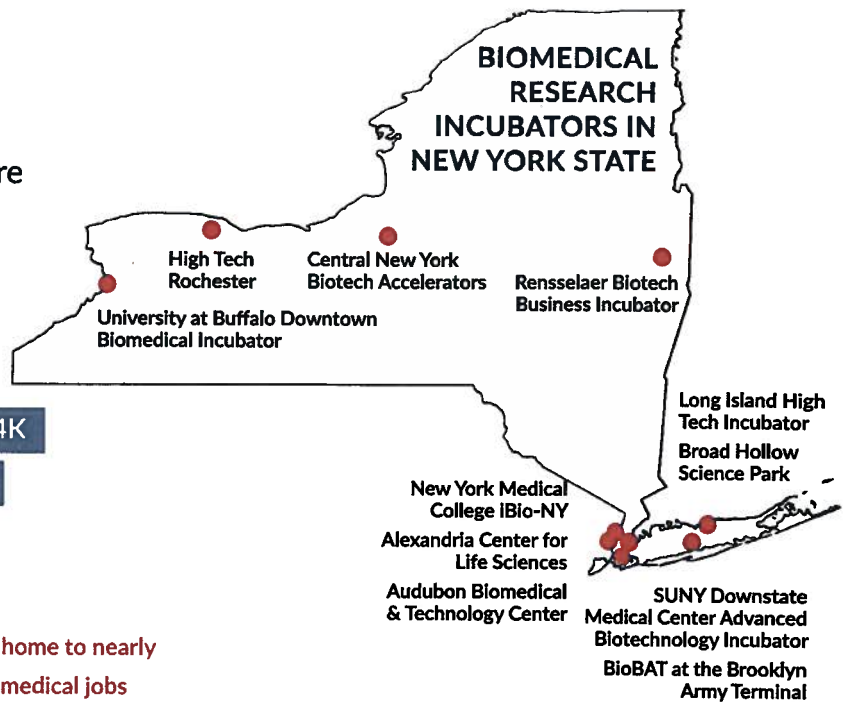


SOURCES: CALIFORNIA INSTITUTE FOR REGENERATIVE MEDICINE, MASSACHUSETTS LIFE SCIENCES CENTER, BIOSCIENCE CONNECTICUT, CANCER PREVENTION RESEARCH INSTITUTE OF TEXAS

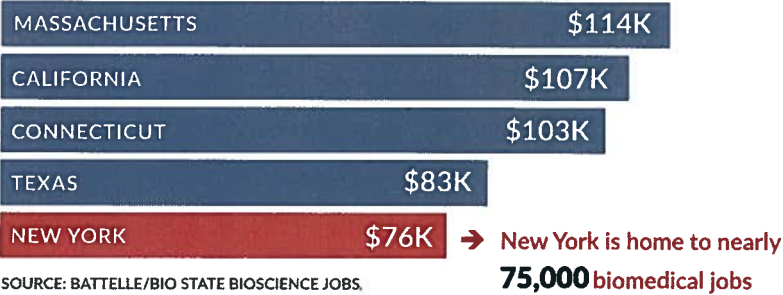
# BIOMEDICAL RESEARCH IN NEW YORK STATE

## INVESTMENT IN BIOMEDICAL RESEARCH DRIVES ECONOMIC GROWTH

New York's medical schools house the intellectual capital and research infrastructure to create next-generation diagnostic and therapeutic technologies, and to launch successful startup companies.



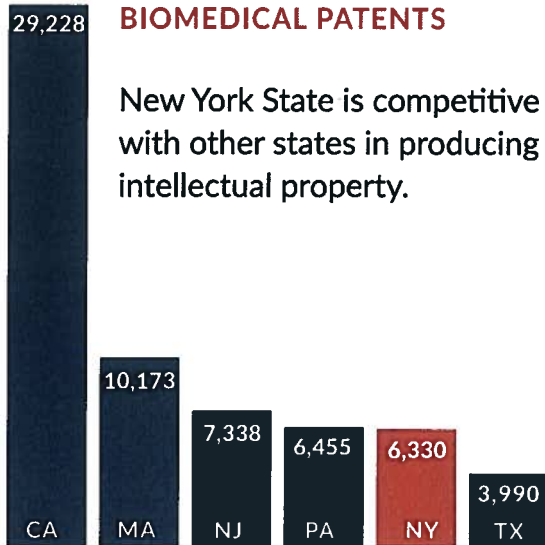
## AVERAGE WAGES IN BIOMEDICAL JOBS



SOURCE: BATTELLE/BIO STATE BIOSCIENCE JOBS, INVESTMENTS AND INNOVATION 2014 REPORT

## BIOMEDICAL PATENTS

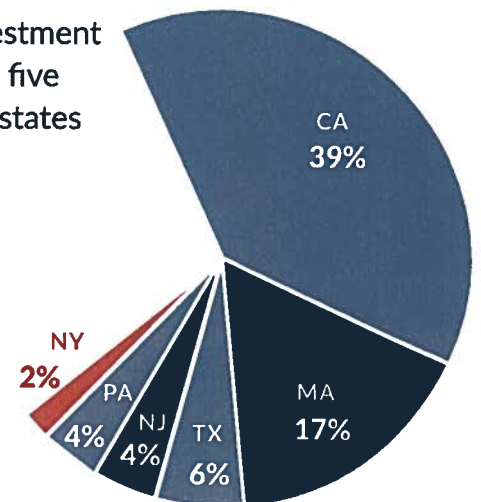
New York State is competitive with other states in producing intellectual property.



## VENTURE CAPITAL INVESTMENT

But venture capital (VC) investment in biomedicine over the past five years has largely accrued to states other than New York.

- From 2009 – 2013, California and Massachusetts led all states in funding combining to account for **56% of the total \$49 billion** VC investments in bioscience
- New York State companies account for only **2%**



SOURCE: BATTELLE/BIO STATE BIOSCIENCE JOBS, INVESTMENTS AND INNOVATION 2014 REPORT

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# The Faculty Development Program:

## *A strategic and proven investment for New York State's economy*

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### **Funding Request**

The Associated Medical Schools of New York (AMSNY) urges Governor Cuomo and the State Legislature to support the NYSTAR Faculty Development Program and fund the program at \$50 million in the upcoming FY 2015-2016 Budget.

### **Background on the Faculty Development Program (FDP)**

From 2002 to 2009, New York State invested \$36 million in the Faculty Development Program (FDP) to recruit and retain star scientists. Per FDP regulations, only researchers from outside New York State who possessed a proven track record of success within their fields were eligible for recruitment funds. This relatively small investment leveraged more than \$250 million in additional federal and other awards – a return of nearly \$7.00 for every dollar invested. Moreover, this does not include the indirect economic return (i.e. increased employment, increased taxes, increased spending on equipment and supplies) generated by these funds.

### **The Bottom Line**

- Revitalizing this program and providing a minimum funding level of \$50 million in the upcoming State budget would be a much needed first step for New York to maintain our competitive position in the global bioscience industry, while also expanding opportunities across the state to attract businesses, create jobs, and advance life saving treatments and medical breakthroughs.
- Because of deep declines in federal NIH funding, top scientific talent are now more than ever in a nearly constant state of free agency. They are being courted by, and will relocate to, states and institutions that offer the best opportunities for success.
- It is expensive to vie for top talent. Because today's market for star scientists is fiercely competitive, top research talent can cost well upwards of \$1 million. In fact, the average recruitment package for the 13 researchers courted by Texas from New York was \$3.1 million.
- Using data from United For Medical Research's state-by-state analysis, received \$19 billion in NIH funding in 2014. This funding supported 32,000 jobs or 17 jobs per million dollars. Furthermore, because NIH funds are awarded to individual scientists – not academic institutions; when researchers leave NYS for other locations, their NIH awards move with them.

## STATE BIOSCIENCE INITIATIVES

As a leader in the life sciences industry, star researchers from New York's academic institutions are constantly targeted by other states and countries seeking to develop or expand their bioscience sectors. Today, New York faces aggressive competition among states such as Texas, California, Massachusetts, and Florida, as well as countries in Europe and Asia. These regions have all stepped up efforts to recruit top researchers in the life

### California

- California has authorized **\$3 billion** over 10 years to support stem cell research through the California Institute for Regenerative Medicine's (CIRM, 2004 – 2014).
- **State Investment for Faculty Recruitment:** The California Institute for Regenerative Medicine's (CIRM) *Research Leadership Awards* were created with the intent to help California universities and research institutions recruit the **best scientists in the stem cell field who are currently living outside California**.
  - Funding amount authorized for Research Leadership Awards: \$48 million
  - Funding authorized by CIRM for Faculty Awards: \$142 million
  - **Total funding by CIRM for faculty recruitment: \$190 million**

### Texas

- In 2007, Texas voters established the Cancer Prevention and Research Institute of Texas (CPRIT) and committed **\$3 billion over 10 years** to support cancer research and prevention programs in Texas (2007 – 2017). CPRIT received **\$600 million** in appropriations from the Texas Legislature for its 2012-2013 biennium. As of June 2014, CPRIT has awarded over 500 grants totaling more than \$1 billion<sup>1</sup>.
- **State Investment for Faculty Recruitment:** Since 2011, **\$248 million** in CPRIT funding has been distributed to Texas universities and academic institutions **to explicitly recruit top researcher faculty from out-of-state**.
  - Funding authorized for recruiting established investigators: \$105 million
  - Funding authorized for recruiting first-time, tenure-track faculty members: \$103 million
  - **Total funding to date for faculty recruitment: \$205 million**

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<sup>1</sup> CPRIT Expenditures Internal Audit Report, June 9, 2014, link: <http://www.cprit.state.tx.us/images/uploads/rp-2014-expenditures-internal-audit-report.pdf>

## Massachusetts

- Massachusetts' Life Sciences Initiative committed **\$1 billion** in state funds over 10 years and has leveraged that commitment to attract an additional **\$1.2 billion** in private investment (2008 – 2018).
- **State Investment for Faculty Recruitment:** The *New Faculty Startup Grant* targets investments to attract and retain nationally prominent faculty at Massachusetts' colleges and universities with grants of \$250,000 per year for up to three years, in a 1:1 match with the academic institution.<sup>2 3</sup>
- **Economic Impact:** Among the findings of a 2014 Northeastern University report, Massachusetts ranks first in the nation in in per capita life sciences employment by a wide margin, with 1.8 times the number of jobs per capita as California, and 2.3 times per capita in New York.

## Connecticut

- Connecticut's Bioscience Initiative authorized **\$1.5 billion** over the next decade to scale up its scientific research infrastructure (2011 – present). It represents an economic development strategy being implemented by the state to spur bioscience job growth in Connecticut. This includes:
  - **\$200 million for the Bioscience Innovation Fund:** The fund will provide grants, equity investments, loans and loan guarantees to foster innovation in smaller companies;
  - **\$864 million for the Bioscience Connecticut initiative:** These monies will provide capital to expand educational and research facilities and funds for faculty recruitment; and
  - **\$291 million investment in Jackson Laboratory,** which is building a research center in Farmington that will focus on personalized medicine discoveries: This fund will also include money for capital and star scientist recruitment .

## Maryland

- In 2009, Maryland's Governor proposed a **\$1.1 billion**, 10-year *BioMaryland 2020 program*, which included a Maryland Biotechnology Center and Invest Maryland. Invest Maryland had an online auction in 2012 and raised \$84 million in tax credits, all sold to insurance companies, with the funds to be used for a fund of funds and is focused on the life sciences.
- The State of Maryland has invested more than **\$91 million** over six years to fund researchers and translational and clinical research in stem cells and is currently funding this effort at over **\$10 million** a year.

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<sup>2</sup> [http://www.massbio.org/writable/editor\\_files/2010\\_incentives.pdf](http://www.massbio.org/writable/editor_files/2010_incentives.pdf)

<sup>3</sup> [http://www.umass.edu/research/system/files/3\\_MLSC.pdf](http://www.umass.edu/research/system/files/3_MLSC.pdf)

## Georgia

- The Georgia Research Alliance Eminent Scholars Program has invested approximately **\$400 million**. This funding has:
  - Attracted more than **50** Eminent Scholars;
  - Leveraged an additional **\$2 billion** in federal and private funding;
  - Created more than **5,000** new technology jobs;
  - Generated **120** new technology companies; and
  - Allowed established Georgia companies to expand into new markets<sup>4</sup>

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<sup>4</sup> <https://www.bio.org/articles/successful-state-initiatives-encourage-bioscience-industry-growth>

## Texas' Recruitments from New York

- Texas is one of many states actively pursuing New York State's top researchers
- Texas has successfully recruited 13 of New York State's leading scientific and medical researchers in the past four years, spending \$40 million in the process.

### CPRIT Established Investigators:

- 1) James Allison, Ph.D., *Recruitment to The University of Texas M.D. Anderson Cancer Center from Memorial Sloan-Kettering Cancer Center* – \$10,000,000<sup>5</sup>
- 2) Ramon Parsons, Ph.D., *Recruitment to Southwestern Medical Center at Dallas from Columbia University* – \$4,000,000<sup>6</sup>

### CPRIT Rising Stars:

- 3) Ming Zhou, Ph.D., *Recruitment to Baylor College of Medicine from Columbia University* – \$4,500,000<sup>7</sup>
- 4) Ron Dror, Ph.D., *Recruitment to The University of Texas at Austin from D.E. Shaw Research* – \$2,500,000<sup>8</sup>
- 5) Peng Chen, Ph.D., *Recruitment to Texas A&M University from Cornell University* – \$3,250,000<sup>9</sup>

### CPRIT Recruitment of First-Time, Tenure-Track Faculty Members:

- 6) Xi Chen, Ph.D., *Recruitment to Baylor College of Medicine from Weill Cornell Medical College* – \$2,000,000<sup>10</sup>
- 7) Aryeh Warmflash, Ph.D., *Recruitment to Rice University from The Rockefeller University* – \$2,000,000<sup>11</sup>
- 8) Laura Banaszynski, Ph.D., *Recruitment to The University of Texas Southwestern Medical Center at Dallas from The Rockefeller University* – \$2,000,000<sup>12</sup>
- 9) Katharina Schlacher, Ph.D., *Recruitment to The University of Texas M.D. Anderson Cancer Center from Memorial Sloan-Kettering Cancer Center* – \$2,000,000<sup>13</sup>
- 10) Poulikos Poulikakos, Ph.D., *Recruitment to The University of Texas M.D. Anderson Cancer Center from Memorial Sloan-Kettering Cancer Center* – \$2,000,000<sup>14</sup>
- 11) Ilya Finkelstein, Ph.D., *Recruitment to The University of Texas at Austin from Columbia University Medical Center* – \$2,000,000<sup>15</sup>
- 12) Francesca Cole, Ph.D., *Recruitment to The University of Texas M.D. Anderson Cancer Center from Memorial Sloan-Kettering Cancer Center* – \$2,000,000<sup>16</sup>

<sup>5</sup> CPRIT News Release, November 2011, link: [http://www.cprit.state.tx.us/images/uploads/rft\\_slate\\_11022011.pdf](http://www.cprit.state.tx.us/images/uploads/rft_slate_11022011.pdf)

<sup>6</sup> CPRIT News Release, August 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_08022012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_08022012.pdf)

<sup>7</sup> CPRIT News Release, August 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_08022012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_08022012.pdf)

<sup>8</sup> CPRIT News Release, August 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_08022012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_08022012.pdf)

<sup>9</sup> CPRIT News Release, March 29, 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_03292012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_03292012.pdf)

<sup>10</sup> CPRIT News Release, November 19, 2014, link: <http://www.cprit.state.tx.us/news/CPRIT-awards-32-new-grants-2014-11-19/>

<sup>11</sup> CPRIT News Release, August 20, 2014, link: <http://www.cprit.state.tx.us/news/cprit-news/>

<sup>12</sup> CPRIT News Release, May 21, 2014: <http://www.cprit.state.tx.us/news/cprit-awards-product-development-and-research-grants-05-21-2014/>

<sup>13</sup> CPRIT News Release, January 24, 2014: <http://www.cprit.state.tx.us/news/cancer-prevention-and-research-institute-of-texas-awards-three-new-research-grants/>

<sup>14</sup> CPRIT News Release, December 2012: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_12052012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_12052012.pdf)

<sup>15</sup> CPRIT News Release, August 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_08022012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_08022012.pdf)

<sup>16</sup> CPRIT News Release, August 2012, link: [http://www.cprit.state.tx.us/images/uploads/scientific\\_recruitment\\_slate\\_08022012.pdf](http://www.cprit.state.tx.us/images/uploads/scientific_recruitment_slate_08022012.pdf)



13) Agnal Sfeir, Ph.D., *Recruitment to The University of Texas Southwestern Medical Center at Dallas from The Rockefeller University – \$2,000,000*<sup>17</sup>

## California Recruitment from New York State

- Between 2004 and 2012 recruitments for California's Institute of Regenerative Medicine (CIRM) came mainly from within California
- In 2012 CIRM changed its policy so funds could only be used for out of state recruitments.
- Between 2004 and 2008, California has successfully recruited only three New York State stem cell researchers.
- In 2007, New York State dedicated \$600 million over eleven years to stem cell research. This dedicated funding amount for stem cell research has allowed New York State's research institutions to fend off other state stem cell research initiatives (such as CIRM)
- The following stem cell researchers were recruited to California from New York through the use of CIRM funding:
  1. Lin He, PhD<sup>18</sup> -- *Recruitment to the University of California, Berkeley, from Cold Spring Harbor Laboratory in 2008*<sup>19</sup>
  2. Tiziano Barben, PhD<sup>20</sup> -- *Recruitment to the Beckman Research Institute at City of Hope, Duarte, California from Memorial Sloan-Kettering Cancer Center in 2006*
  3. Bin Chen, PhD<sup>21</sup> -- *Recruitment to University of California, Santa Cruz, from SUNY Stony Brook in 2006*<sup>22</sup>

<sup>17</sup> CPRIT News Release, October 29, 2010, link: [http://www.cprit.state.tx.us/images/uploads/recruitment\\_award\\_10292010.pdf](http://www.cprit.state.tx.us/images/uploads/recruitment_award_10292010.pdf)

<sup>18</sup> Wikipedia page: [http://en.wikipedia.org/wiki/Lin\\_He](http://en.wikipedia.org/wiki/Lin_He)

<sup>19</sup> See full profile at: <http://www.macfound.org/fellows/53/#sthash.UAWVJREf.dpuf>

<sup>20</sup> LinkedIn Profile: <https://www.linkedin.com/pub/tiziano-barberi/6/8b9/a35>

<sup>21</sup> UC Santa Cruz Profile: <http://mcd.ucsc.edu/faculty/chen.html>

<sup>22</sup> Bin Chen, CIRM: <http://www.cirm.ca.gov/node/20831/review>