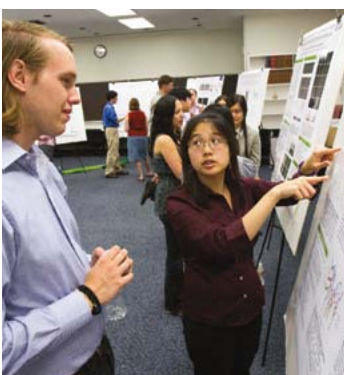
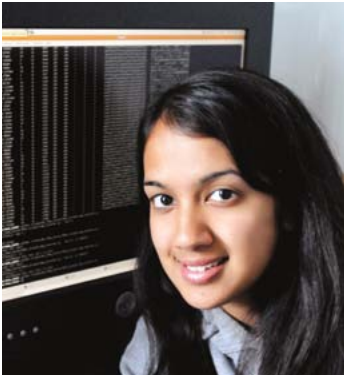




Amgen Scholars Program

U.S. AND EUROPE



Through an eight-year, \$34 million commitment from the Amgen Foundation, the Amgen Scholars Program is providing undergraduate students with the opportunity to engage in hands-on science research at some of the world's leading universities.

“In the sciences, a sustained, hands-on laboratory research experience can influence the direction of a young person’s life as it did my own when I was an undergraduate, setting me on the pathway to becoming a physicist engaged in research and teaching. I am delighted to see the Amgen Scholars Program provide the opportunity for deserving undergraduate students to engage in cutting-edge science research through summer research programs in a wide network of leading universities, including my own.”

Robert J. Birgeneau, Chancellor, University of California, Berkeley

DISCOVER YOUR POTENTIAL

"The important thing is not to stop questioning." Albert Einstein's words sum up one of the key aims of the Amgen Scholars Program: to empower the best and brightest undergraduate students to undertake research into some of today's most pressing and most urgent scientific questions. Four years since its launch in 2006, the success of the scientific research program has exceeded all expectations, and it now operates on an international level with 13 host universities across the United States and Europe. The program has changed lives at the individual level. By providing the opportunity to ask scientific questions, it has encouraged exceptional students from across the globe to raise their intellectual aspirations, inspiring them to consider scientific careers and giving them a springboard to become the best that they can be. There are nearly 1,200 program alumni, many of whom are currently enrolled in PhD and MD/PhD programs, and four to date have been named as Rhodes Scholars. In addition, the program website enables the growing international community of Scholars and alumni to continue to use and build on the professional networks they have developed.

In late 2010, the Amgen Foundation demonstrated its ongoing commitment to the Amgen Scholars Program by announcing four years of additional funding. This will enable another 1,200 undergraduates to have the opportunity to carry out research alongside some of the best minds working in science. It is an incredibly exciting time for all involved, as we reflect on the successes so far, and focus on how we can further extend and enhance the impact that the program has on the growing community of Amgen Scholars and alumni. We hope that one way of doing so will be through the new alumni travel awards, whereby program alumni can apply for funding to attend national and international conferences, in order to share their research and develop their scientific careers. We also welcome Washington University in St. Louis as a new host institution, broadening our geographic range by adding a U.S. Midwestern dimension.

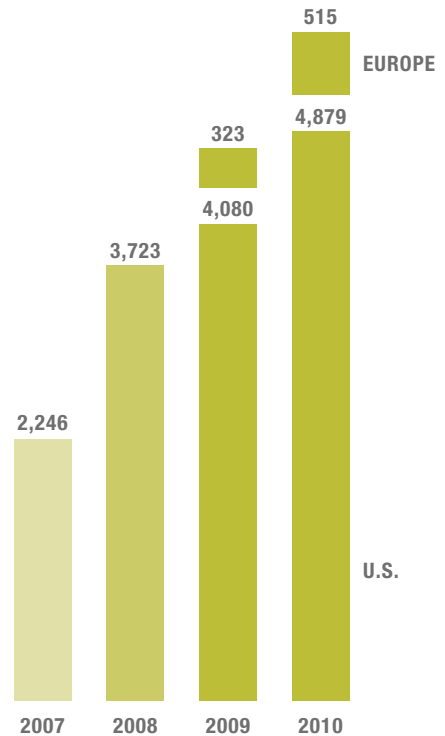
Although the program has grown and evolved substantially since its launch in 2006, it remains true to its original aims. As we move into 2011 and beyond, we continue to hope that the Amgen Scholars Program inspires the next generation of world-leading scientists to strive for the answers to their own—and society's—most challenging scientific questions.



Tony Minson
 Director, Amgen Scholars
 European Coordinating Centre
 University of Cambridge

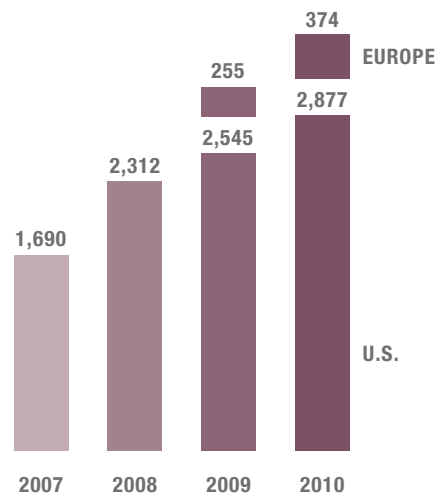


Christopher M. Jones
 Director, Amgen Scholars
 U.S. Program Office
 Massachusetts Institute of Technology

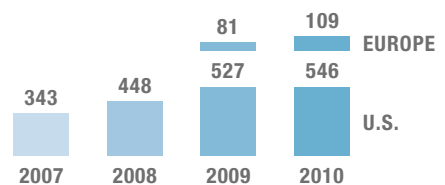


NUMBER OF AMGEN SCHOLAR APPLICATIONS*

*NOTE: Applicants may apply to multiple Amgen Scholar host institutions.



NUMBER OF AMGEN SCHOLAR APPLICANTS



NUMBER OF COLLEGES AND UNIVERSITIES REPRESENTED BY AMGEN SCHOLAR APPLICANTS

AMGEN SCHOLARS: THE NEXT GENERATION OF SCIENTISTS

For the past four years, promising young scientists participating in the Amgen Scholars Program have dedicated eight to 10 weeks of their summer to be immersed in hands-on, world-class research at 13 top universities.

The program, funded by the Amgen Foundation, becomes a pivotal experience in the academic lives of these undergraduates, pairing them with top faculty mentors. Most are able to explore areas of research far beyond their regular undergraduate education.

This year, 335 undergraduates representing 158 colleges and universities across 37 states and 14 countries were selected from nearly 3,300 applicants.

By the summer's end, the Amgen Scholars report an increase in their lab skills and in their ability to communicate about science, feel better prepared for graduate school and leave with a broader perspective on their science-based career options.

"Amgen Scholars gave me the laboratory skills that I need to do well in graduate school and the work ethic and drive I need to be successful during the rest of my academic career," says UCLA Amgen Scholar Jonathan Kuo. "It also enabled me to understand the scope of a very specific investigation in the grand scheme of things."

With the conclusion of the 2010 program, there are nearly 1,200 Amgen Scholar alumni across the United States and Europe. Several have earned prestigious fellowships and awards, including the Rhodes Scholarship, the Henry Richardson Labouisse '26 Prize and the Hertz Foundation Fellowship.



AREAS OF RESEARCH

- Biochemistry
- Bioengineering
- Bioinformatics
- Biopsychology
- Biotechnology
- Chemical & Biomolecular Engineering
- Chemistry
- Immunology
- Medical Pharmacology
- Microbiology
- Molecular, Cell & Developmental Biology
- Molecular Genetics
- Molecular Medicine
- Molecular Pharmacology
- Neurobiology
- Neuroscience
- Pathology
- Physiological Psychology
- Physiological Science
- Statistics
- Toxicology

"A strong pipeline of passionate and well-prepared scientists is critical to solving the complex issues society faces today and into the future," said Jean Lim, president, Amgen Foundation. "The Amgen Scholars Program encourages students to pursue a scientific career by providing hands-on experiences in laboratories of top scientific research universities across the United States and Europe."

Jean Lim, President, Amgen Foundation



ELIZABETH H. BLACKBURN, PhD
MORRIS HERZTEIN PROFESSOR OF BIOLOGY AND PHYSIOLOGY
IN THE DEPARTMENT OF BIOCHEMISTRY AND BIOPHYSICS
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Her pioneering work in the discovery of how chromosomes are protected by telomeres and telomerase won Dr. Elizabeth H. Blackburn the **2009 Nobel Prize in Physiology or Medicine**, and contributed to her inclusion as one of *Time Magazine's* "100 Most Influential People in the World" two years earlier.

The distinguished molecular biologist is famous for her co-discovery of telomerase and her tireless study of telomeres. A telomere is the structure at the end of a chromosome that protects that chromosome. Telomerase is the enzyme that replenishes the telomere. Both play a key role in normal cell function, especially in cell aging and in most cancers.

Recently, Dr. Blackburn and her University of California, San Francisco (UCSF) colleagues found telomere erosion in those who suffer from chronic stress. They're investigating whether lifestyle interventions promote telomere repair, perhaps staving off illness.

Included on her team? Amgen Scholars.

"Summer programs like Amgen Scholars are absolutely crucial," Dr. Blackburn says. "This is where young people discover firsthand if they enjoy doing real research—if they have the temperament and the ability, and if they like it. It's hard to know that just by reading textbooks."

And, Dr. Blackburn notes, students with real lab experience are more likely to be accepted into top PhD and MD-PhD programs like the ones at UCSF.

"When we look at incoming students, those who do really well are those who've had good exposure to a research program like ours," she says. "Experience tends to be very predictive of someone's future. Amgen Scholars helps students take the next steps in their careers. It's a marvelous opportunity."

Hampshire College senior Rachel Ingraham certainly took advantage of that opportunity. She spent the summer of 2008 as an Amgen Scholar in Dr. Blackburn's lab, studying alternative functions of telomerase.

"My summer with Dr. Blackburn solidified my interest in science and lab work," Ingraham says. "I enjoyed the lab's strong sense of community, and I loved that all the scientists there are earnest and passionate about what they do. Along with gaining a lot of new molecular biology techniques, it showed me what real science is all about."



1



2



3

2010 HOST INSTITUTIONS



4



5



6



7



8



9



10



11



12



13

*These organizations received a grant from the United Way Worldwide (UWW) in collaboration with the Amgen Foundation. The Amgen Foundation and UWW work together to support the efforts of nonprofit organizations outside of the United States.

“Some Amgen Scholars come to our labs as top students but novices in research, eager to learn. As they complete the summer and look to the future, they could have co-authored papers, polished their lab expertise and developed into the creative and critical scientists we need to push biomedical research forward. Every aspect of the program is critical in preparing this new generation of scientists.”

Serhiy Souchelnytskyi, Associate Professor of Oncology-Pathology,
Karolinska Institutet

1. CALIFORNIA INSTITUTE OF TECHNOLOGY

Pasadena, CA
25 Scholars from
14 Universities across
8 States

2. COLUMBIA UNIVERSITY/ BARNARD COLLEGE

New York, NY
29 Scholars from
16 Universities across
11 States

3. HOWARD UNIVERSITY

Washington, D.C.
20 Scholars from
13 Universities across
8 States

4. MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Cambridge, MA
28 Scholars from
15 Universities across
13 States

5. STANFORD UNIVERSITY

Palo Alto, CA
30 Scholars from
23 Universities across
16 States and Puerto Rico

6. UNIVERSITY OF CALIFORNIA, BERKELEY

Berkeley, CA
26 Scholars from
22 Universities across
17 States and Puerto Rico

7. UNIVERSITY OF CALIFORNIA, LOS ANGELES

Los Angeles, CA
26 Scholars from
13 Universities across
8 States

8. UNIVERSITY OF CALIFORNIA, SAN DIEGO

San Diego, CA
30 Scholars from
16 Universities across
10 States

9. UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

San Francisco, CA
25 Scholars from
23 Universities across
19 States

10. UNIVERSITY OF WASHINGTON

Seattle, WA
29 Scholars from
23 Universities across
16 States and Puerto Rico

11. UNIVERSITY OF CAMBRIDGE

Cambridge, United Kingdom
25 Scholars from
18 Universities across
8 Countries

12. KAROLINSKA INSTITUTET*

Stockholm, Sweden
15 Scholars from
11 Universities across
5 Countries

13. LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN*

Munich, Germany
27 Scholars from
18 Universities across
8 Countries

James Clements had never picked up a pipette before entering the prestigious bioengineering lab of Dr. Paul Yager at the University of Washington. As the top mechanical engineering senior in his class at Loyola Marymount University, Clements was far more versed in robotics and computer-aided engineering programs than in biology research.

Yet Clements developed an interest in bioengineering simply by reading articles on the subject. "I was looking for an opportunity to do bioengineering research, but my school didn't offer it," Clements says. "My adviser suggested the Amgen Scholars Program as a way to get the exposure that I wanted from a strong mentor—something I otherwise wouldn't have been able to experience at Loyola."

Not only did Clements learn about bioengineering—he took to it so naturally that within a few weeks of the program, Clements was well on his way to applying for a Record of Invention, which Dr. Yager's lab will submit in the coming months.

His discovery: a next-generation, paper-based assay to determine not just if a patient is sick, but also how sick the patient is.

Clements' assay—based on the same paper used in pregnancy tests—uses specific antibodies to measure a patient's degree of illness.

Clements was particularly interested in focusing on malaria, noting that too often patients in developing countries are diagnosed with and treated for the disease when, in fact, they don't really have it. Taking anti-malarial medication just makes the patients sicker.

"My assay is helpful because you can tell the presence or absence of disease in easy-to-count bars that appear on the paper," Clements says. "And the assays are cheap to produce. So both aspects are helpful for use in developing countries."

"The Amgen Scholars Program has shown me that I can, indeed, work in bioengineering," Clements says. "I'd been nervous and hesitant to apply to bioengineering PhD programs. Now I know I can go in and understand what's going on and do very well. Amgen Scholars has really empowered me."

And one other big benefit of the Amgen Scholars Program that certainly isn't lost on Clements: "My lab skills have dramatically improved," he says. "Proteins aren't as scary as they used to be."



"I'd been nervous and hesitant to apply to bioengineering PhD programs. Now I know I can go in and understand what's going on and do very well. Amgen Scholars has really empowered me."

James Clements with Dr. Paul Yager at the University of Washington.

SCHOLAR NAME: **James Clements**
UNDERGRADUATE INSTITUTION:
Loyola Marymount University
HOST INSTITUTION:
University of Washington

HOMETOWN: **Everett, Washington**
MAJOR/DEGREE OBJECTIVE:
Mechanical Engineering

“Throughout my lab work, I was able to apply all of my chemistry knowledge to biology applications and problems. I really got to learn a new field of science.”

Karla Ramos with Dr. Michael Marletta at UC Berkeley.

SCHOLAR NAME: **Karla Ramos**
UNDERGRADUATE INSTITUTION:
**University of Puerto Rico,
Río Piedras**

HOST INSTITUTION:
University of California, Berkeley
HOMETOWN: **Bayamón, Puerto Rico**
MAJOR/DEGREE OBJECTIVE:
Chemistry



A desire to see how science is practiced in a different lab on a different college campus led Karla Ramos to the Amgen Scholars Program. The University of Puerto Rico, Río Piedras, chemistry major learned about Amgen Scholars during a biomedical research conference and eagerly applied to the program at the University of California, Berkeley.

Ramos spent 10 weeks in the Marletta Lab, run by Dr. Michael Marletta. The lab is well known for applying chemistry and biology to novel and fundamental biological questions, with applications in human health and disease.

Her project: studying different porphyrin-protein complexes that could be used to image and measure oxygen levels in biological environments such as tumors. Knowing the amount of oxygen in a tumor can help physicians predict the growth of the tumor, and that helps them determine the best course for tumor treatment.

Ramos had her chemistry skills down pat before entering the lab. It was the biology that she anticipated as a challenge. She ended the summer thrilled to recognize the close connection between the two.

“Before the Amgen Scholars Program, I didn’t think I could apply so much chemistry to biology—I thought the fields would be too different and they wouldn’t interact with each other,” Ramos says. “But throughout my lab work, I was able to apply all of my chemistry knowledge to biology applications and problems. I really got to learn a new field of science.”

Along with providing Ramos with an excellent research experience, Dr. Marletta has guided her as she applies to PhD programs at Stanford University, Northwestern University and, of course, UC Berkeley.

And about that biology? Ramos will keep studying it.

“Before the program, I had only been thinking of pursuing organic or synthetic chemistry programs—I thought I wouldn’t like biology at all,” Ramos says. “The Amgen Scholars experience changed my mind.”

“What I really loved about the summer is that I was able to do something very different from what I do at the University of Puerto Rico,” Ramos adds. “And I like the fact that, by doing research, I’m able to contribute to something that might be helpful to people with health issues. Even if my ideas don’t come to fruition right away, they might in the future. And that’s a good feeling.”

If you study genetics and developmental biology, chances are you're well acquainted with *Drosophila melanogaster*—otherwise known as the common fruit fly. Because the flies share the same common genetic systems as humans, scientists often use them in research projects.

As an Amgen Scholar, Burak Tepe certainly gained a greater appreciation for these flies. He spent the summer working in the Behavioral Genetics Lab at the Max Planck Institute of Neurobiology at the Ludwig-Maximilians-Universität München (LMU).

Run by Dr. Hiromu Tanimoto, the lab researches how the memory traces for associative learning are formed and how they are translated into behavior.

Tepe, now a third-year Molecular Biology and Genetics student at Boğaziçi University in Istanbul, worked on a project focused on discovering the mechanism and neural circuits that flies use to discriminate among colors.

Tepe worked to generate flies with only partially functional photoreceptors in their compound eyes. Using this transgenic technique, Tepe tried to determine the minimal set of the flies' photoreceptors for color discrimination. He then performed a series of behavioral experiments to show that his method was successful in practice.

As any scientist can attest, it's difficult to reach solid scientific conclusions in a two-month program. *Drosophila* have five photoreceptor types in their compound eyes. Tepe had time to test only a fraction of the numerous possible combinations. Yet his findings hold great potential and will be used in the lab's future experiments.

Tepe ended the summer with plenty of material for his poster, which he presented at the European symposium. He gained the kind of lab experience he was looking for—and, as a bonus, was able to interact with LMU's computational neuroscientists.

"I really wanted to work in a lab outside my country, and the Amgen Scholars Program was a great way for me to do that and to meet and work with people all over Europe," Tepe says. "I loved the trips and activities that we had together and the time that we spent together."

The program also reinforced his desire to earn a PhD and focus his career in neuroscience.

"I've seen other labs and experienced other branches of science, but none of them are as interesting to me as neuroscience," Tepe says. "Neuroscience is a hot topic, and we're beginning to make inroads thanks to today's technology."



"I really wanted to work in a lab outside my country, and the Amgen Scholars Program was a great way for me to do that and to meet and work with people from all over Europe. I loved the trips and activities that we had together and the time that we spent together."

Burak Tepe with Dr. Hiromu Tanimoto at Ludwig-Maximilians-Universität München

SCHOLAR NAME:
Burak Tepe
UNDERGRADUATE INSTITUTION:
Boğaziçi University, Istanbul

HOST INSTITUTION: **Ludwig-Maximilians-Universität München**
HOMETOWN: **Izmir, Turkey**
MAJOR/DEGREE OBJECTIVE:
Molecular Biology and Genetics

ALUMNI PROFILE

“The Amgen Scholars Program offered an ideal opportunity to fulfill my passion for science... participating in cutting-edge research and making my own discoveries definitely made me even more addicted to science.”

Ana Tufegdžić Vidakovic with Dr. Alejandra Bruna at the Cambridge Research Institute where she is a doctoral student.

SCHOLAR NAME:

Ana Tufegdžić Vidakovic

UNDERGRADUATE INSTITUTION:

University of Belgrade

HOST INSTITUTION:

University of Cambridge (2009)

HOMETOWN:

Belgrade, Serbia

MAJOR/DEGREE UNDERGRADUATE:

Molecular Biology and Physiology

CURRENT MAJOR/DEGREE OBJECTIVE –

GRADUATE SCHOOL: **PhD in Oncology**



When Ana Tufegdžić Vidakovic realized her university lacked the opportunity for her to actively participate in research or conduct her own project before her senior year, she then University of Belgrade molecular biology and physiology major decided to look for a summer program that would provide her with much-needed lab experience.

Her search led her to the Amgen Scholars Program and into the lab of Dr. Patrick Varga-Weisz of the Babraham Institute at the University of Cambridge.

Vidakovic spent the summer of 2009 there, associating an uncharacterized protein with a recently discovered class of chromatin remodeling enzymes—proteins that change the structure of chromosomes.

Vidakovic investigated whether this uncharacterized protein, which she and her lab mates named HAPPI (Histone ATAD2 Proline Rich Protein Interactor), operated by the usual chromatin remodeling enzymes or by an entirely new molecular mechanism.

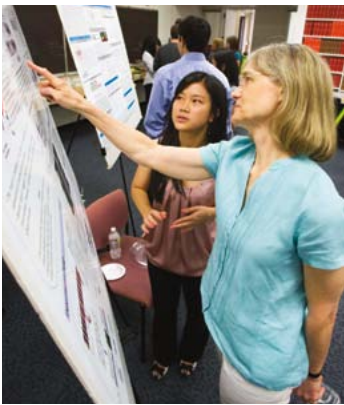
Vidakovic showed that HAPPI recognizes a specific chromosomal code—histone tail modification—which marks active genes. She narrowed down the

minimal region of HAPPI that binds to this histone mark and showed that the region represents a completely novel class of histone code reader proteins.

Vidakovic found her Amgen Scholars experience so valuable that she returned to the University of Cambridge to pursue her PhD in oncology with Professor Carlos Caldas at the Cambridge Research Institute. She's focusing on the epigenomics of breast cancer stem cells.

“The Amgen Scholars Program offered an ideal opportunity to fulfill my passion for science, choose an exciting project and work at one of the world's best universities,” Vidakovic says. “Those are things that I wouldn't have experienced at my home school. Participating in cutting-edge research and making my own discoveries definitely made me even more addicted to science.”

“In a place like Cambridge, it's not easy to leave an impact in research when so many people around you are the world's biggest names in science,” Vidakovic adds. “However, I like to think that my project was a small but essential contribution to science. It definitely inspired me to continue on my scientific path as a graduate student.”



Pictured below, Jennifer Lai, a senior double majoring in biological engineering and music and theater arts at MIT, spent her summer as a 2009 Amgen Scholar at Columbia University, where she conducted research under Dr. Lance Kam.



Each year, only 32 Americans are selected as Rhodes Scholars. Since the Amgen Scholars Program began in 2007, one Scholar has been awarded a Rhodes Scholarship every year. The prestigious scholarships cover two years of tuition and expenses at the University of Oxford.

Jennifer Lai is the most recent Amgen Scholar to win this distinction. Lai was an Amgen Scholar at Columbia University where she worked on a treatment used to boost the immune system. She will use her 2010 Rhodes Scholarship to pursue a master's degree in integrated immunology at Oxford.

Anya Yermakova was named a Rhodes Scholar in 2009 and is now pursuing a doctorate in mathematical biology at Oxford. She was an Amgen Scholar at the University of Washington in Seattle.

Steven Mo won the Rhodes Scholarship in 2008 and is working on his doctorate in engineering at Oxford. He was an Amgen Scholar at MIT.

And Todd Gingrich was named a Rhodes Scholar in 2007 and earned his master's degree in theoretical chemistry at Oxford in August 2010. He's now pursuing a PhD in chemistry from the University of California, Berkeley. Gingrich was an Amgen Scholar at the California Institute of Technology.

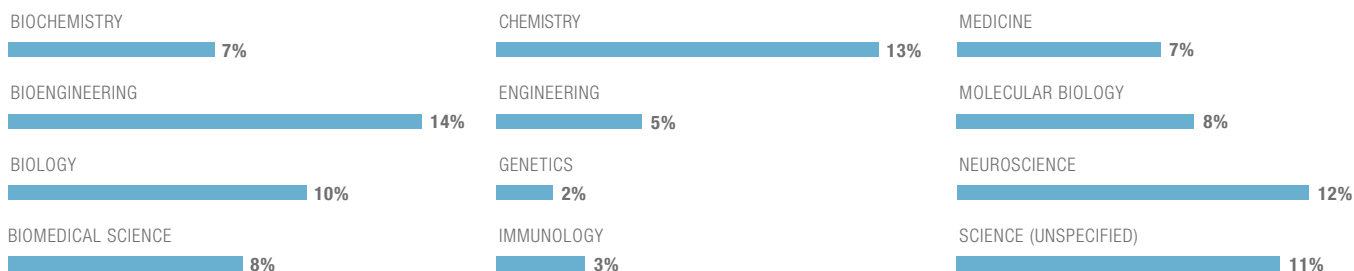
PROGRAM ALUMNI

Current Status* of the 611 Program Alumni
Who Have Completed Their Undergraduate Studies

243

GRADUATE SCHOOL IN SCIENCE (MASTERS AND PHDS)

STUDENTS IN MASTER AND PhD PROGRAMS BY DISCIPLINE



36

MD/PHD PROGRAMS

131

SCIENCE-BASED CAREER

83

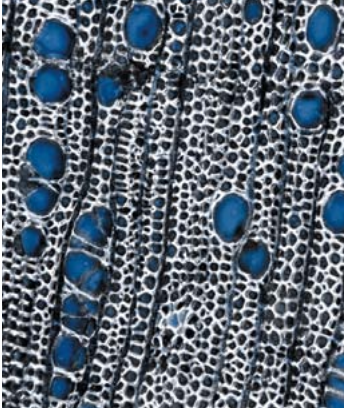
PROFESSIONAL SCHOOL
IN SCIENCE (MD, OTHER)

118

NON-SCIENCE
GRAD SCHOOL OR
CAREER/UNKNOWN

DID YOU KNOW: More than 80% of Amgen Scholar alumni who have completed their undergraduate studies are now pursuing an advanced degree or a career in science or engineering.

*Status as of Fall 2010. Note that 539 of the program's 1,150 alumni are still pursuing their undergraduate studies and are not included in the chart above.



EMERGING TREATMENTS

In gene therapy, new genes are inserted into the cells and tissues of patients to replace defective genes with functional genes. The field is still young but has expanded greatly since the first clinical trial in 1990.

Stem cell therapy involves growing stem cells in the lab, guiding them toward a desired cell type and then surgically implanting them in patients. In theory, stem cells can integrate into diseased tissue and reverse the effects of the disease.

Nanomedicine manipulates molecules and structures on an atomic scale. For example, experimental nanoshells (metallic lenses) can convert infrared light into heat energy to destroy cancer cells.

DID YOU KNOW: As of Fall 2010, 279 program alumni are now pursuing masters, doctorates and MD-PhDs in scientific fields at more than 75 different universities across the globe.

BIOTECH THERAPIES OF THE FUTURE

Innovative biotech therapies and diagnostics are changing how many diseases are prevented and treated. A key feature of this momentous shift in healthcare is the emergence of personalized medicine as a new treatment paradigm. The prevailing standards of medical care are still determined by averaging responses across large groups of people. Personalized medicine aims to manage disease based on personal characteristics, including age, gender and genetic makeup.

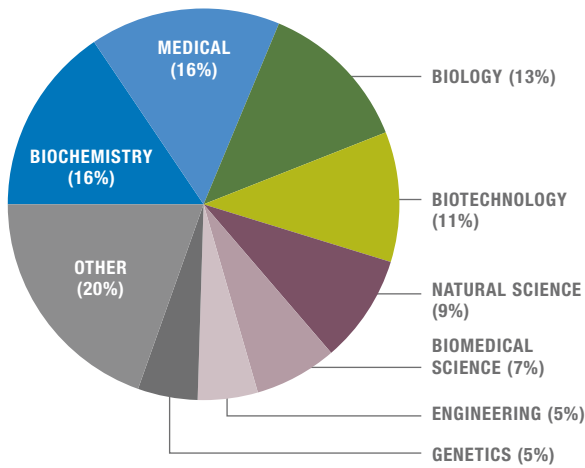
Progress in diagnosing genetic disease has been driven by the discovery of single nucleotide polymorphisms (SNPs, pronounced “snips”)—single nucleotide changes in the DNA sequence. When a SNP occurs in a gene

that encodes for a specific protein, it may change that protein and cause a disease or increase the risk for a disease. Detecting SNPs allows for improved diagnosis, treatment and prevention.

Another major development is pharmacogenomics, which seeks to determine how the genetic profile of patients influences their response to particular drugs. The goal is to develop tests to predict if a particular drug is likely to be safe and efficacious in a given patient, or what dose of the drug a patient should receive.

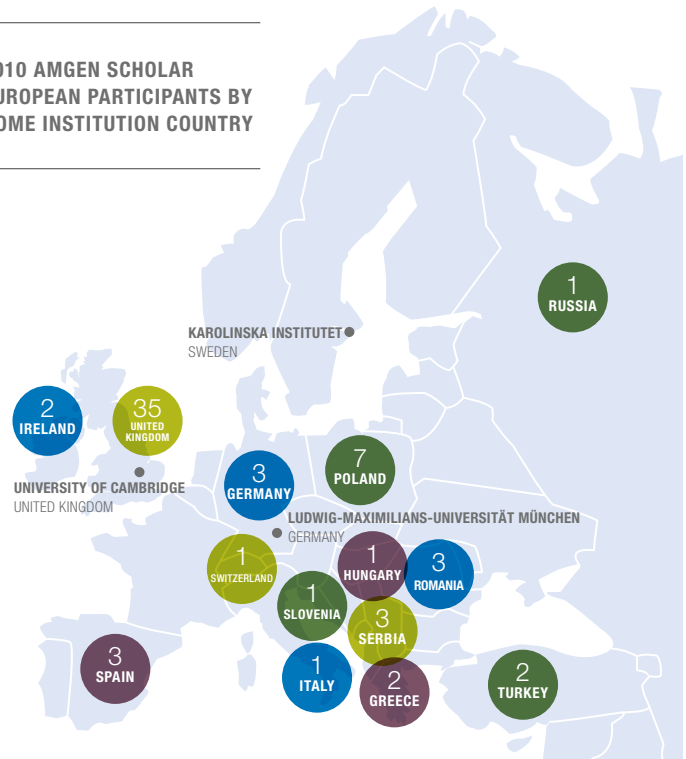
Advances in DNA technology are the keys to pharmacogenomics and personalized medicine. Both developments promise to result in more effective individualized healthcare and advances in preventive medicine.

PARTICIPATION IN EUROPE BY UNDERGRADUATE AREA OF STUDY



*Total exceeds 100% as some participants identified more than one area of study.

2010 AMGEN SCHOLAR EUROPEAN PARTICIPANTS BY HOME INSTITUTION COUNTRY



“Particularly for students from institutions with limited research opportunities, this intensive learning experience at a top university is proving incredibly valuable in inspiring the pursuit of graduate school and a scientific career.”

Scott Heimlich, Senior Program Officer, Amgen Foundation

LIST OF 2010 EUROPEAN PARTICIPANTS' HOME INSTITUTIONS

GERMANY

Jacobs University Bremen
Ludwig-Maximilians-Universität München

GREECE

University of Athens
University of Crete

HUNGARY

University of Debrecen

IRELAND

Trinity College Dublin
University College Cork

ITALY

University of Milano – Bicocca

POLAND

Adam Mickiewicz University
Jagiellonian University
University of Warmia and Mazury
University of Wrocław
Medical University of Warsaw

ROMANIA

Grigore T. Popa University of Medicine and Pharmacy
Luliu Hațieganu University of Medicine and Pharmacy
University of Agronomic Sciences and Veterinary Medicine - Bucharest

RUSSIA

Lomonosov Moscow State University

SERBIA

University of Belgrade

SLOVENIA

University of Ljubljana

SPAIN

Universitat de Barcelona
Universidad de León
Universidad de Sevilla

SWITZERLAND

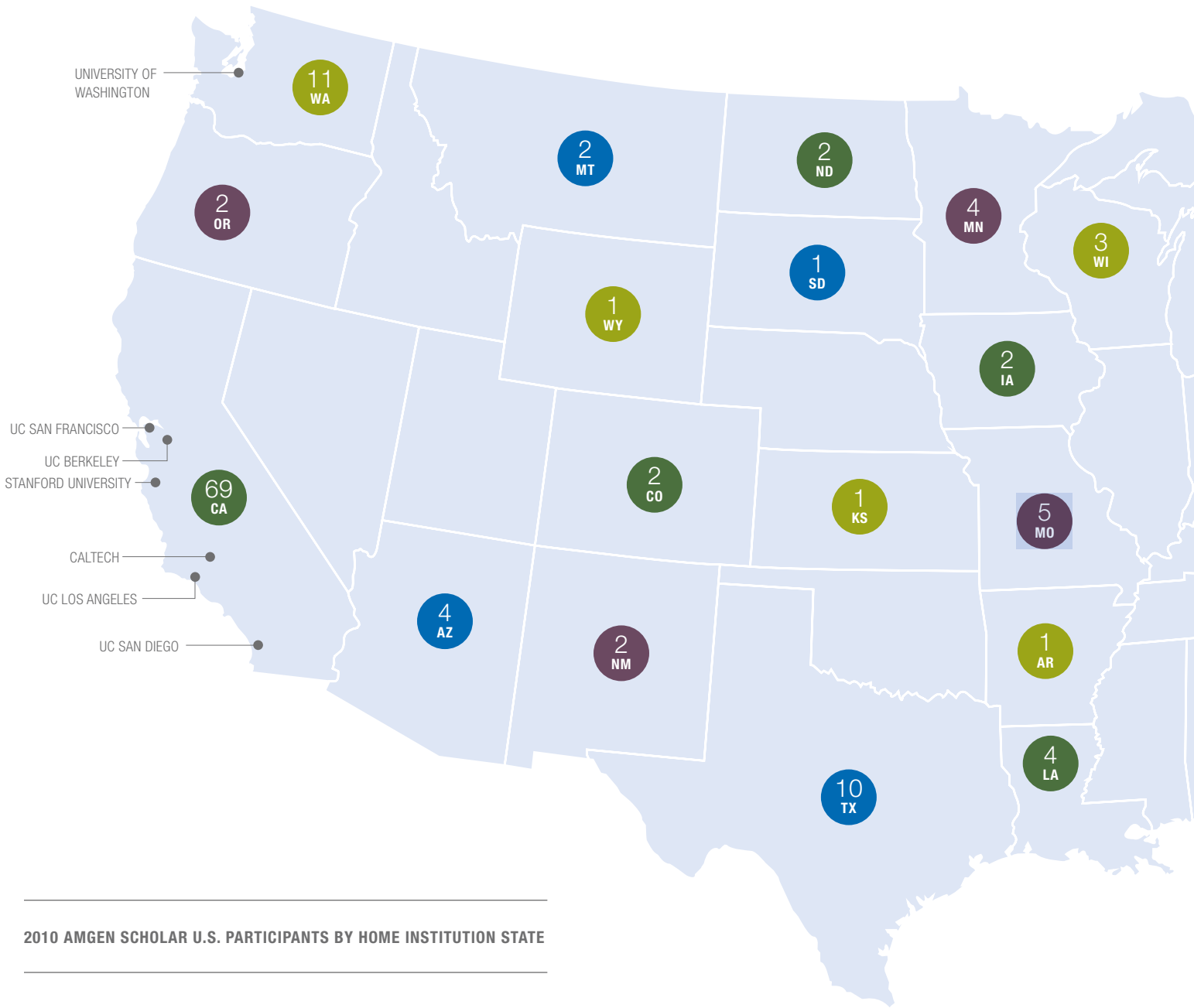
Swiss Federal Institute of Technology in Lausanne

TURKEY

Boğaziçi University
İzmir Institute of Technology

UNITED KINGDOM

Imperial College London
King's College London
University College London
University of Aberdeen
University of Cambridge
University of Edinburgh
University of Leeds
University of Liverpool
University of Oxford
University of St Andrews
University of Sussex
University of Warwick
University of York



2010 AMGEN SCHOLAR U.S. PARTICIPANTS BY HOME INSTITUTION STATE

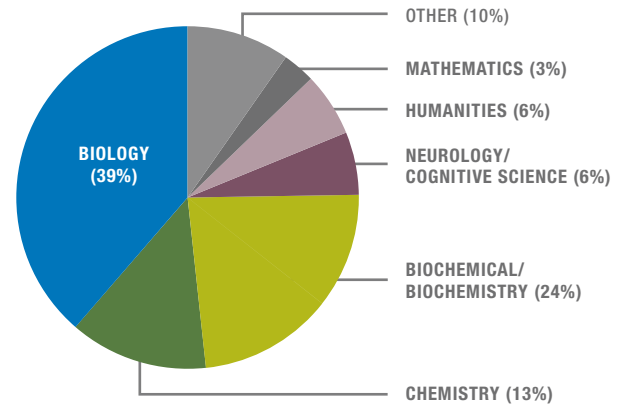
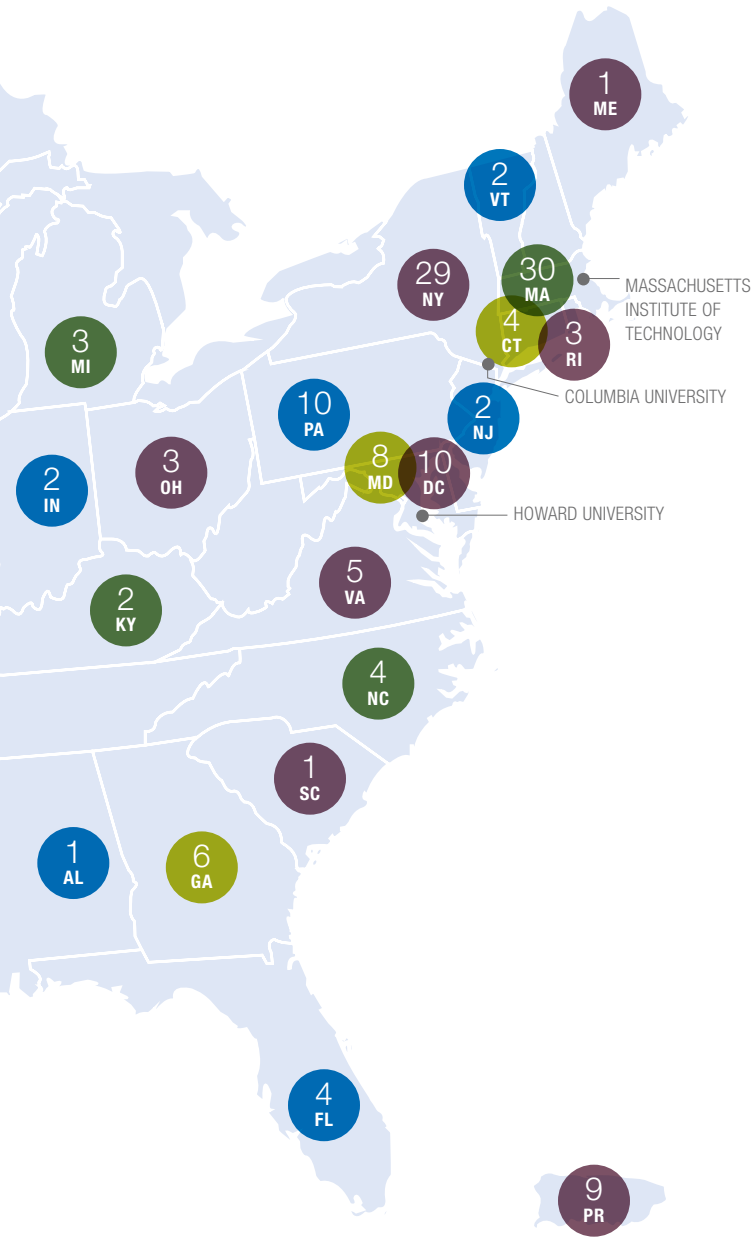
LIST OF 2010 U.S. PARTICIPANTS' HOME INSTITUTIONS

- AL**
Stillman College
- AR**
Ouachita Baptist University
- AZ**
Arizona State University
University of Arizona
- CA**
California Institute of Technology
California State University, Los Angeles
California State University, Northridge
Chapman University
Harvey Mudd College
Loyola Marymount University
Pitzer College
San Diego State University
San Jose State University
- Scripps College
University of California, Berkeley
University of California, Davis
University of California, Los Angeles
University of California, Riverside
University of California, San Diego
University of California, Santa Barbara
University of California, Santa Cruz
University of Southern California
- CO**
Colorado State University
University of Colorado, Boulder
- CT**
Connecticut College
Wesleyan University
Yale University

- DC**
Gallaudet University
Howard University
- FL**
Florida International University
University of Florida
- GA**
Emory University
Morehouse College
- IA**
Grinnell College
- IN**
Indiana University, Bloomington
Rose-Hulman Institute of Technology
- KS**
University of Kansas

- KY**
Morehead State University
University of Kentucky
- LA**
Grambling State University
Northwestern State University
Tulane University
Xavier University of Louisiana
- MA**
Amherst College
Boston College
College of the Holy Cross
Franklin W. Olin College of Engineering
Harvard University
Massachusetts Institute of Technology

PARTICIPATION IN THE U.S. BY UNDERGRADUATE AREA OF STUDY



Northeastern University
Stonehill College
Tufts University
Williams College

MD
Johns Hopkins University
University of Maryland
University of Maryland,
Baltimore County

ME
Bowdoin College

MI
Hope College
University of Michigan, Ann Arbor

MN
Carleton College

MO
University of Missouri – Columbia
Washington University in St. Louis

MT
Carroll College
University of Great Falls

NC
Appalachian State University
Duke University
Fayetteville State University
Winston-Salem State University

ND
University of Mary
University of North Dakota

NJ
New Jersey Institute of Technology
Princeton University

NM
New Mexico State University
University of New Mexico

NY
Barnard College
Columbia University
Cornell University
Hunter College, CUNY
Rensselaer Polytechnic Institute
Rochester Institute of Technology
State University of New York,
Binghamton
State University of New York,
Stony Brook
Syracuse University
Vassar College

OH
Miami University
Ohio State University

OR
Oregon State University
Southern Oregon University

PA
Bryn Mawr College
Carnegie Mellon University
Cedar Crest College
Edinboro University
Gettysburg College
Lafayette College
Lehigh University
University of Pennsylvania
University of Pittsburgh

PUERTO RICO
University of Puerto Rico
University of Puerto Rico, Aguadilla
University of Puerto Rico, Mayagüez
University of Puerto Rico, Río Piedras

RI
Brown University

SC
Clemson University

SD
Augustana College

TX
Baylor University
University of Texas
University of Texas, Brownsville
University of Texas, San Antonio

U.S. VIRGIN ISLANDS
University of the Virgin Islands

VA
George Mason University
Hampton University
Norfolk State University
Randolph-Macon College

VT
Bennington College
Middlebury College

WA
University of Puget Sound
University of Washington
Washington State University

WI
Ripon College
University of Wisconsin – Madison

WY
University of Wyoming

AMGEN SCHOLARS SYMPOSIUM: LIFE AS A SCIENTIST

The Amgen Scholars Symposium remains one of the highlights of the Amgen Scholars Program in both Europe and the United States.

These gatherings offer Scholars the chance to talk about their research projects, learn about biotechnology and scientific careers, and hear firsthand from leading scientists working in industry and academia.

This year's U.S. Symposium was held July 17–19 at UCLA. The European Symposium was held September 6–7 at the University of Cambridge.

Joe Miletich, MD, PhD, senior vice president for research and development at Amgen, offered opening keynote remarks at both the U.S. and European sessions, focusing his message on the impact of biotechnology on drug discovery and development.

Other leading scientists from Amgen and the participating universities took to the podium as well, sharing their professional and life experiences and their own research in identifying drug targets, validating and identifying therapeutic molecules, conducting clinical trials and overseeing the manufacturing process. They also offered valuable advice on graduate school and various career paths available in the sciences.

In addition, the U.S. Amgen Scholars heard from Robert Satcher, MD, PhD, the first orthopedic oncologist astronaut in space and a specialist in bone cancer; Michael Phelps, PhD, the Norton Simon Professor and Chair of the UCLA Department of Molecular and Medical Pharmacology, who developed the Positron Emission Tomography (PET) scan;



“I met several accomplished scientists who inspired me to work hard in my education and never give up. To me, that was a huge takeaway. I have always lacked confidence in myself as a future scientist, but now I have the courage to pursue my dreams.”

UCSF Amgen Scholar Ileana Garcia from the University of Texas

DID YOU KNOW: The 1,150 Amgen Scholar alumni represent 327 colleges and universities across 50 U.S. states and 31 different countries.

and Charles Craik, PhD, Professor, Departments of Pharmaceutical Chemistry, Pharmacology, and Biochemistry/Biophysics, UCSF, on the many careers open to those with a PhD.

European Scholars heard from leading scientists including Mike Clark, PhD, of the University of Cambridge, whose research program led to the discovery of the first humanized therapeutic antibody; and David Klenerman, PhD, professor in biophysical chemistry at the University of Cambridge and co-founder scientist of Solexa, who devised a new way to sequence DNA.

The Amgen Scholars reported particularly enjoying the roundtable sessions and poster presentations where they discuss details of their summer projects with one another. "The roundtables were fantastic," says MIT Amgen Scholar Jenna Caldwell. "I've never before had an opportunity to share my work with other undergraduates who really seemed to understand what I was doing."

"I had never designed or presented a poster before," Cambridge Amgen Scholar Laure-Sophie Camilla d'Angelo adds. "I found it a challenge to answer people's questions regarding my project and explain my poster

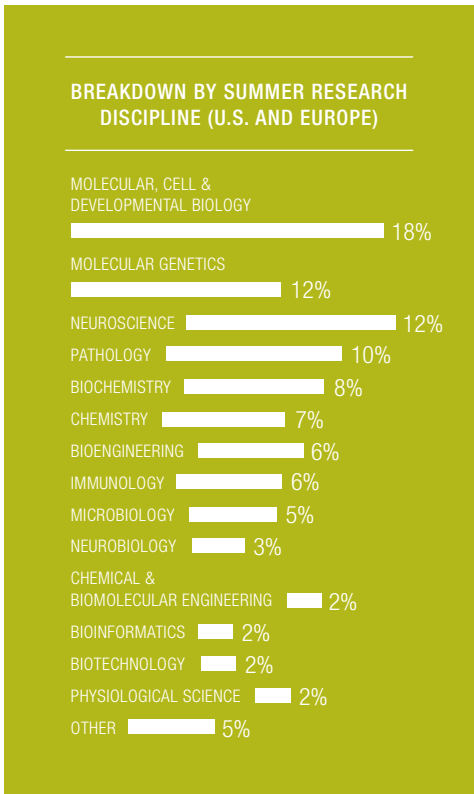
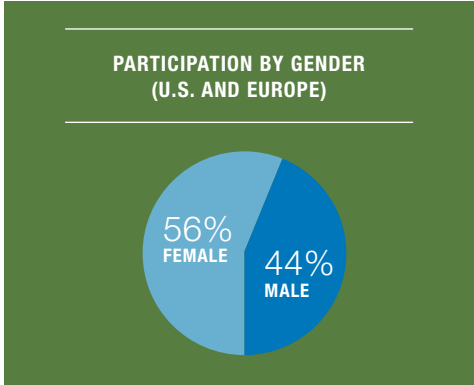
in a clear and understandable way."

As Scholars considered their future education and career paths, they had the opportunity to meet with faculty and staff members from various universities.

"I think that the biggest takeaway from the symposium was the possibility to listen and talk to amazing scientists who have great careers," LMU Amgen Scholar Arianna Lockhart says. "They are available to offer advice to you regarding future perspectives and the possibilities that exist in science."

Others gained a renewed enthusiasm for their work from the scientists themselves.

"I met several accomplished scientists who inspired me to work hard in my education and never give up," UCSF Amgen Scholar Ileana Garcia says. "To me, that was a huge takeaway. I have always lacked confidence in myself as a future scientist, but now I have the courage to pursue my dreams."





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