

University of California
Berkeley
Haas School of Business

Master of Financial Engineering



The Berkeley MFE

Leading Through Innovation

As the second-oldest business school in the United States, the Haas School of Business at the University of California, Berkeley is one of the world's leading producers of new ideas and knowledge in all areas of business. The school offers outstanding management education to about 2,200 undergraduate and graduate students each year.



WALTER A. HAAS SCHOOL OF BUSINESS

The Berkeley Master of Financial Engineering Program provides you with the knowledge and skills to prepare for a career in the finance industry. In one year, you will be ready to take a leading role in a fast-growing field that demands individuals who can apply their education and skills at the cutting edge of finance in buy-side and sell-side firms around the world.



“Innovation is the foundation of our entire Berkeley MFE Program – from the cutting-edge nature of the coursework to the highly personal and successful approach to job placement. Around the world, Berkeley MFE graduates are helping to shape the future of global finance.”

Rich Lyons
Dean, Haas School of Business

A Professional Program

to launch your new financial engineering career

A proven track record of launching successful careers built on a personalized approach provided by a program team with the connections, reputation, and knowledge necessary to help secure jobs at the most selective firms.

A rigorous one-year business school curriculum that gives you in-depth understanding of the underlying frameworks of financial markets and prepares you to work as a financial engineer after graduation, starting on day one.

Expertise of renowned faculty members who are recognized worldwide as some of the best minds in finance.

A collaborative and powerful network for life comprised of diverse peers and alumni that you can leverage from your first day as a Berkeley MFE student.

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When you join the Berkeley MFE Program, you are one year away from turning your specialized training in trading, risk management, derivatives, and commodities investments into a successful career in finance, strategy, or risk assessment. Because of the school's deep ties to global firms and its highly personalized career services, Berkeley-Haas has an unrivaled history of helping students secure top jobs with premier firms in the world's leading financial markets. Employers seek out Berkeley MFE graduates because they demonstrate not only a mastery of powerful financial engineering tools, but also a solid understanding of the best practices for the changing technological, global, and human dimensions of finance.



Insights from Industry Experts

The Financial Institution Seminars I and II series bring industry leaders to the MFE classroom to share their insights on building successful careers in the finance industry. Jean-Marc Orlando (above), head of e-commerce trading at BNP Paribas, addressed the MFE class last year.

Over the past two years, more than 50 industry leaders have shared their expertise as part of the Financial Practice Seminars series. Recent speakers have also included Arnold Miyamoto, managing director of Citigroup, and Joseph Langsam, managing director of Morgan Stanley.

Opening Doors to Future Success

with the tools and connections that will set you apart

A Proven Track Record

Throughout the year, the MFE program staff is working hard behind the scenes to uncover job opportunities at dozens of leading firms, and to work with those companies and with you to determine the best possible career fit. Despite the ever-changing economic environment, the Haas School's record is impeccable—Berkeley MFE graduates received job offers in each of the previous five years at the highest average starting salary of any similar program.

Continuous Personalized Career Services

From your first day as a Berkeley MFE student, the program office works to prepare you to achieve your career goals. Starting as soon as orientation week, group workshops, panels, networking events, and receptions offer valuable information specific to all phases of the career search. You also have access to a wide range of personalized services, including individual career planning, resume writing, and interview preparation. Berkeley-Haas also hosts a career fair specifically for MFE students in San Francisco and participates in the October New York Fair organized by the IAFE (International Association of Financial Engineers) that together draw more than 60 organizations.

The Internship Advantage

A highlight of the Berkeley MFE experience is your 12-week internship. This gives you hands-on experience and ongoing connections with practitioners at firms such as Citigroup, BlackRock, Goldman Sachs, and Morgan Stanley. These connections have often led to careers at these firms. Your internship gives you immediate opportunities to refine your skills and marketability and helps you build your professional network.

Your Worldwide Network

Career support does not end after graduation. As a Berkeley MFE student, you have access to one of the best professional networks on the planet. More than 32,000 business school graduates are connected by the robust Haas Alumni Network, with chapters in major cities around the globe. The Haas online alumni community, Haas@Cal, offers Haas students and alumni a searchable alumni directory, online job postings, lifelong email forwarding options, and various career resources.

Global Connections

Alumni in Europe

Berkeley MFE alumni hold top jobs at leading firms across the globe. Recent alumni working in Europe include (left to right) Societe General Managing Director Krishan Rattan, MFE 03; Goldman Sachs Vice President Delphine Bouyssarie, MFE 08; Sator SPA Partner Luca Barone, MFE 05; and Acumen Global Partners Director Thomas LaRowe, MFE 04.



Berkeley-Haas has an unparalleled record of helping students secure top jobs around the world at the highest starting salaries of any similar program. Last year, **98.5%** of graduates seeking full-time employment were successfully placed with a first-year total compensation average of **\$155,975**.

A Premier Internship Program

Berkeley MFE students secure internships at many of the top finance firms around the world. Beginning during orientation, the program office helps to focus you on the internship phase of the program. Staff members work directly with you to uncover opportunities and secure your placement at a top finance firm. Here are just a few groups of 2011 interns at select firms.



2011 Credit Suisse Interns



2011 Blackrock Interns



2011 Citigroup Interns



2011 Morgan Stanley Interns

2011 Full-time Employment Statistics

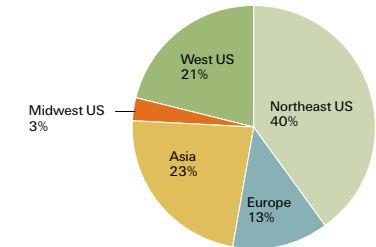
| | |
|---------------------------------------|------------------|
| Total Number of Students: | 67 |
| Number of Students Seeking Positions: | 66 |
| Number of Total Students Placed: | 65 |
| % of Students Placed: | 98.5% |
| Number of Total Offers: | 101 |
| Total Number of Students With Offers: | 65 |
| % of Students With Offers: | 98.5% |
| Total Average Full-time Compensation: | \$155,975 |

Top 2011 Full-time Employers

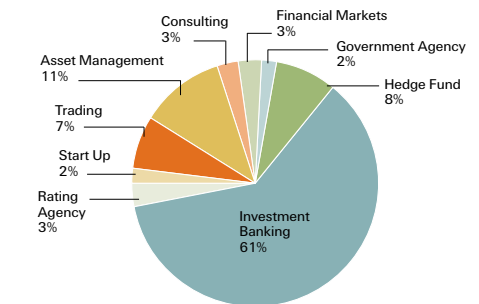
| | | |
|--|---------------------------------|--------------------------------|
| Allianz | Credit Suisse | Numerix |
| Bank of America | Cutler Group | RBC Capital |
| Barclays Capital | GMO | RiskCare |
| BlackRock | Goldman Sachs | Societe Generale |
| BNP Paribas | JP Morgan | Standard & Poor's |
| Capula Investment Management | Kellner DiLeo | Start-Up |
| China's State Administration of Foreign Exchange | McKinsey & Company | The Stock Exchange of Thailand |
| Chopper Trading | Monetary Authority of Singapore | Tudor Investment Corporation |
| Citigroup | Moody's Analytics | UBS |
| | Morgan Stanley | Wells Fargo |
| | Nomura | |

2011 Full-time Employment At-a-Glance

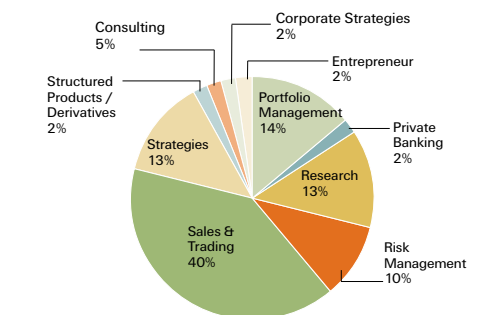
Job Locations



Job Industries



Job Functions



A Clear Path to Ideal Jobs

built upon a history of success

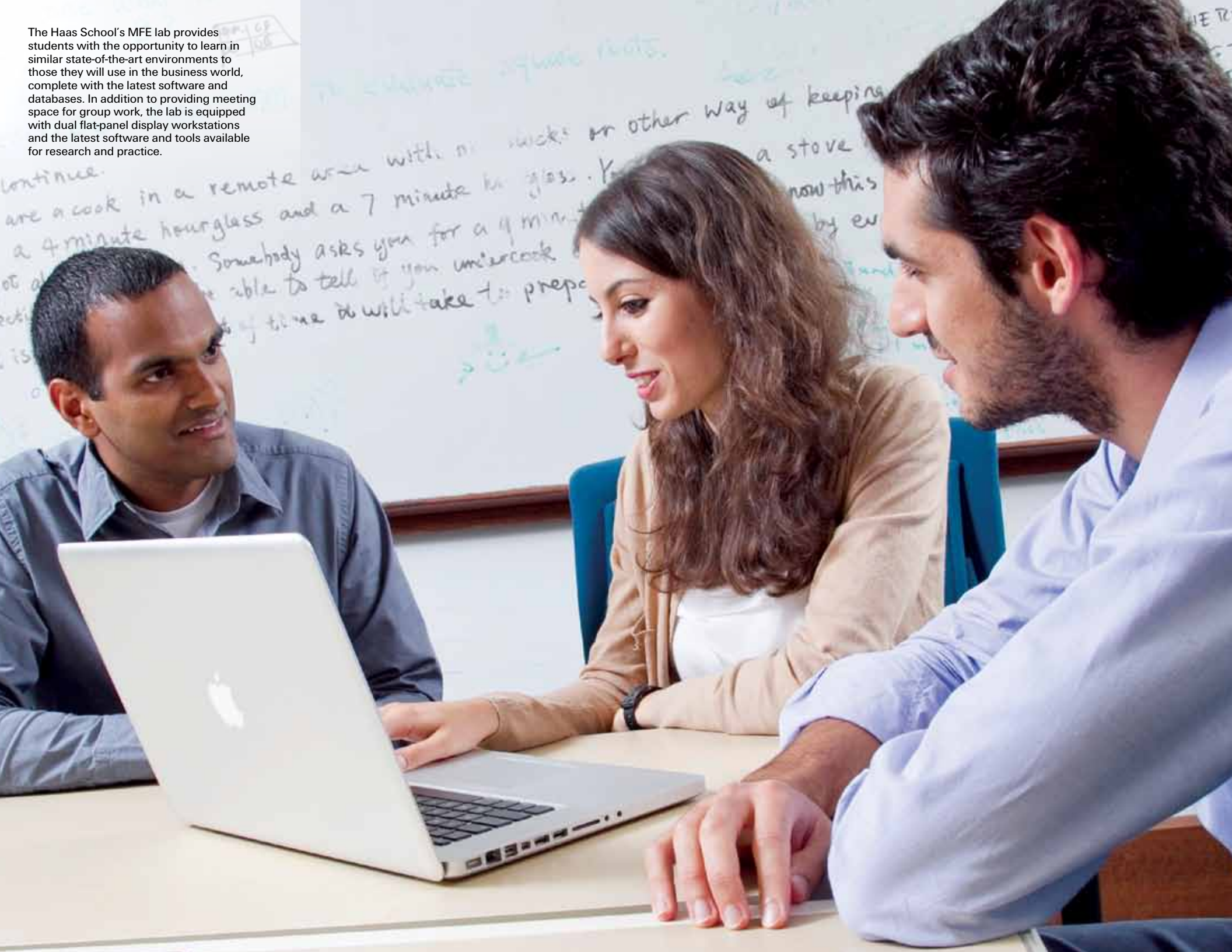
Internship Statistics

| | 2012 | 2011 |
|---|----------------|----------------|
| Total Number of Students: | 67 | 67 |
| Number of Students Seeking Internships: | 67 | 66 |
| Total Students Placed: | 66 | 66 |
| % of Students Placed: (66 of 67 sought internship) | 99% | 100% |
| Total Offers: | 109 | 105 |
| % of Students With Offers: | 99% | 100% |
| Average Monthly Compensation: | \$7,153 | \$7,799 |
| Median Monthly Compensation: | \$7,750 | \$8,000 |

2012 Internship Companies

| | |
|--|---|
| American Century Investments | Manulife Financial |
| Analysis Group | Matthews International Capital Management |
| Ascend Analytics | Mellon Capital Management |
| Bank of America | Mizuho Corporate Bank |
| BlackRock | Moody's Analytics |
| BNP Paribas | Morgan Stanley |
| Camden Asset Management | Parallax |
| China Securities Regulatory Commission | R2 Financial Technology |
| Citigroup | RenRe Energy Advisor |
| Contingent Macro Advisors | Research Affiliates |
| Corpbanca | Royal Bank of Canada |
| Credit Suisse | Societe Generale |
| Dodge & Cox | Spot Trading |
| Dow Chemical | Standard & Poor's |
| Four Elements Capital | State Street Global Advisors |
| Goldman Sachs | Thomson Reuters |
| J.P. Morgan Chase | Wellington Management |
| Kellner Dileo & Company | |

The Haas School's MFE lab provides students with the opportunity to learn in similar state-of-the-art environments to those they will use in the business world, complete with the latest software and databases. In addition to providing meeting space for group work, the lab is equipped with dual flat-panel display workstations and the latest software and tools available for research and practice.



Anchored in the latest theories and best practices in quantitative finance, the Berkeley MFE curriculum prepares you to work as a financial engineer immediately after graduating. Designed exclusively for MFE students, courses are seamlessly integrated with one another, allowing the mathematical, statistical, and computer science methods to be incorporated with the theoretical framework and institutional setting in which they are applied.

An Innovative Curriculum

prepares you to make an immediate impact

Structured for Success

The MFE requires only one year of study, which makes it attractive to students with strong quantitative skills and focused career interests. The program kicks off with an informative and social week-long orientation, during which you'll get to know other new students and gain a sense of what the classroom experience will hold. MFE students must complete 28 units of coursework, plus an internship or on-site project. Berkeley-Haas has an exceptional record of helping students secure internships, consistently placing more than 98 percent of students each year.

Applied Finance Project

In addition to the internship, MFE students are required to complete an applied finance project that develops or uses quantitative finance tools and techniques learned in the program or internship. Students have the option of completing one-unit or three-unit projects. Each year, a \$5,000 award is given to the best three-unit project

Benefit from Industry Expertise

The curriculum also includes weekly Financial Practice Seminars featuring a diverse slate of finance practitioners. In the first term, speakers discuss jobs available to graduates of the MFE Program and the skills needed to contribute to a firm's mission. In the second term, speakers provide insight into the way the financial world is changing: new products and needs; evolving data and information systems; and similar topics.

Curriculum Overview

Each semester represents eight weeks of study. The 12-week internships begin in October and end in early January, between the Fall and Winter semesters.

Spring

Empirical Methods in Finance (2 units)

Introduction to Stochastic Calculus (2 units)

Investments and Derivatives (3 units)

Summer

Derivatives: Quantitative Methods (2 units)

Fixed Income Markets (2 units)

Accounting and Taxation of Derivatives (1 unit)

Credit Risk (2 units)

Fall

Risk Management (2 units)

Success and Failure in Financial Innovation (1 unit)

The Design of Securities for Corporate Financing (1 unit)

Equity & Currency Markets (2 units)

Advanced Computational Finance (2 units)

Topics in Financial Engineering: Optimization Models in Finance (2 units)

Winter

Applied Finance Project (1 or 3 units)

Asset-backed Security Markets (2 units)

Dynamic Asset Management (2 units)

High Frequency Finance (2 units)

Behavioral Finance (1 unit)

Topics in Financial Engineering: Ethics and Regulation (1 unit)

Berkeley MFE faculty members are renowned groundbreakers and thought leaders in the field of quantitative finance. In addition to undertaking preeminent research that feeds directly into the curriculum, many of these scholars also have practical experience in the creation of financial instruments and software, as well as the implementation of innovative financial strategies.



Berkeley-Haas Professor Emeritus Oliver E. Williamson was awarded the 2009 Nobel Prize in Economic Sciences—the second time a Haas professor has won the honor since 1994—for his work in the area of economic governance.



Finance Professor Hayne Leland won the first-ever Stephen A. Ross Prize in 2008 from the Foundation for the Advancement of Research in Financial Economics (FARFE) for his research in corporate debt pricing and capital structure. A consortium of finance academics and practitioners from around the world created the prize to recognize and encourage research in financial economics—a field that explains the underpinnings of corporate finance and capital markets.

Thought Leaders, Innovators, and Practitioners at the forefront of new ideas

Pioneers of Financial Engineering

Many Haas School faculty members have long stood at the forefront of the quantitative finance industry. For example, Professor Mark Rubenstein is renowned for his work on the binomial options pricing model (also known as the Cox-Ross-Rubinstein model), as well as his early work on asset pricing. He is currently an associate editor of multiple journals in these areas, and many of his papers are frequently reprinted in survey publications. In 1993, he served as President of the American Finance Association, and in 1995 he was named International Financial Engineer of the Year. Like Rubenstein, Professor John O'Brien was an early innovator in the investment consulting space. In addition to serving as chairman of the Capital Market Fund and the S&P 500 SuperTrust, O'Brien co-developed the O'Brien 5000 common stock index, later renamed the Wilshire 5000 index, currently the nation's broadest-based index.

Professional Faculty Drawn from Business

In addition to having early innovators and scholars, the Berkeley MFE faculty also draws from some of the most successful minds in today's business community, including Lecturer Amnon Levy, head of portfolio research at Moody's Analytics, and Jing Zhang, global head of Moody's KMV Research. The faculty also includes BlackRock executives Ronald Kahn, managing director and global head of equity research, and Michael Melvin, managing director and head of currency research.

A History of Shaping Business Policy

Berkeley MFE faculty have also played important roles in shaping national and international business policy, serving as consultants, board members, and speakers at major business conferences and seminars. Professor Dwight M. Jaffee has been an advisor to the World Bank, the Federal Reserve System, the Office of Federal Housing Enterprise Oversight, and the US Department of Housing and Urban Development.



Inequality

- "...government should seek to reduce income inequality. ...initially, the level of inequality today is too high and is likely to get worse."
- "... create a tax system that prevents income from getting worse."
- "...the tax system would be designed to be enforcing a [maximum] mean rather than [simply] specifying..."

Professor John O'Brien teaches his Success and Failure in Financial Innovation course.

Guided by four defining principles, the distinctive Berkeley-Haas culture is integral to shaping its MFE students. Berkeley-Haas students question the status quo, possess confidence without attitude, think beyond themselves, and act as students always. These attributes combine to create an environment conducive to teamwork, collaboration, and involvement. With only about 65 students in each incoming class, MFE students are members of a tight-knit, supportive peer network that draws on both shared experiences and a diversity of ideas and backgrounds to build bonds that last a lifetime.



Teamwork Yields Results

As part of an elective course (The Independent Study Project) within the MFE curriculum, these students worked as a team, collaborating with RBC Capital Markets to develop and implement a standardized framework for stress testing multi-strategy portfolios.

A Collaborative Culture

cultivates a unique, dynamic community

Striving for Success

Resourceful, intelligent, energetic, and, above all, highly motivated: all of these are hallmarks of Berkeley MFE students. Many students have already achieved significant success in their careers, as well as in their prior academic lives—over half have already earned post-graduate and doctoral degrees in other, related areas of expertise. Most MFE students have backgrounds in quantitative disciplines upon entering the program.

A Wealth of Diversity

With more than a dozen countries and more than 50 undergraduate institutions typically represented in each incoming class, the Berkeley MFE Program draws from a wide range of backgrounds and experiences. Because they are diverse and unique as individuals, Berkeley MFE students contribute to the wealth of their classmates' experiences while in school, and add great value to one another as fellow alumni in future endeavors around the world. The relatively small size of the MFE program permits students to get to know most members of their class—strong connections develop between faculty and students, and among students.

A Vibrant, Thriving Community

As a complement to their coursework, students also have the opportunity to get involved in clubs and extracurricular opportunities. The student-run Financial Engineering Association (FESA) represents student interests to the MFE and Haas administrations and coordinates events specifically tailored to MFE students. Coming to Haas also means joining the dynamic community of a top-ten business school at a premier university. From networking mixers to annual conferences, guest speakers to school-wide events, there's always something happening at Haas.



Question the Status Quo

*"If you're not **Questioning the Status Quo**, you're not adding value. Having an inquiring mind is what makes you an asset in your job and in your life."*

Usman Mirza, MFE 12

Internship: Société Générale, London, England

Previous degree: BSc, Mathematics, University College London, London, England

Job prior to Haas: Intern, Al Mal Capital PSC, Dubai, UAE



Confidence Without Attitude

*"Being **Confident Without Attitude** means that I am able to speak up and express my own opinions, but am equally open to listening to others and understanding their viewpoints."*

Blair Zhang, MFE 12

Internship: Crédit Suisse, Hong Kong

Previous degree: BS, Quantitative Finance, National University of Singapore, Singapore

Job prior to Haas: Fixed Income Market Risk Analyst, Credit Suisse, Singapore



Beyond Yourself

*"Now, more than ever, it is important for finance professionals to understand and always consider the implications and impact of our work. In addition to providing the framework for personal growth and success, the Berkeley MFE curriculum teaches you to look **Beyond Yourself**, to understand how what you do matters."*

Don Goonetilleke, MFE 12

Internship: State Street Global Advisors, Boston, Massachusetts

Previous degrees: BS, Mathematical Sciences, University of California, Santa Barbara

Job prior to Haas: Actuarial Pension Consultant, Crews MacQuarrie & Associates Inc., Irvine, California



Students Always

*"**Students Always** is a state of mind. We have learned the fundamentals; now we need to make learning a part of our being."*

Soumya Ramachandran, MFE 12

Internship: Royal Bank of Canada, New York, New York

Previous degree: BE, Electronics & Telecommunications, University of Mumbai, India

Job prior to Haas: Quantitative Analyst, Fixed Income Derivatives, Wells Fargo & Co., San Francisco, California

In addition to attending one of the premier business schools in the world, Berkeley MFE students earn a degree from a university whose name and reputation open doors around the globe. The mission of the University of California is to excel in research, teaching, and public service. Over the decades, this mission has developed a culture at UC Berkeley that stimulates greatness.



The Perfect Location

The Bay Area is one of the few places on earth where countless corporate and financial powerhouses are nestled among some of the world's most famous landscapes and outdoor playgrounds. Only an hour from Berkeley, you can cruise through the alluring wine country of Napa and Sonoma counties. Or visit one of the many open beaches or picturesque seaside towns dotting the Pacific coastline, including Big Sur, Carmel-by-the-Sea, and Mendocino. Only three hours from campus, explore Yosemite National Park, with its exquisite glacier-carved valley of towering waterfalls and granite mountains, or ski the world-famous Olympic runs at Lake Tahoe.

The Berkeley Experience

a university second to none

A Distinguished Record

The Berkeley MFE Program draws on the incredible breadth and depth of the University of California at Berkeley, whose graduate programs are consistently ranked among the best in the world, and whose undergraduate programs are among the most selective. The proof is in the university's distinguished record of Nobel-level scholarship, constant innovation, a concern for the betterment of our world, and consistently high rankings of its schools and departments—the Haas School among them.

A History of Path-Bending Innovation

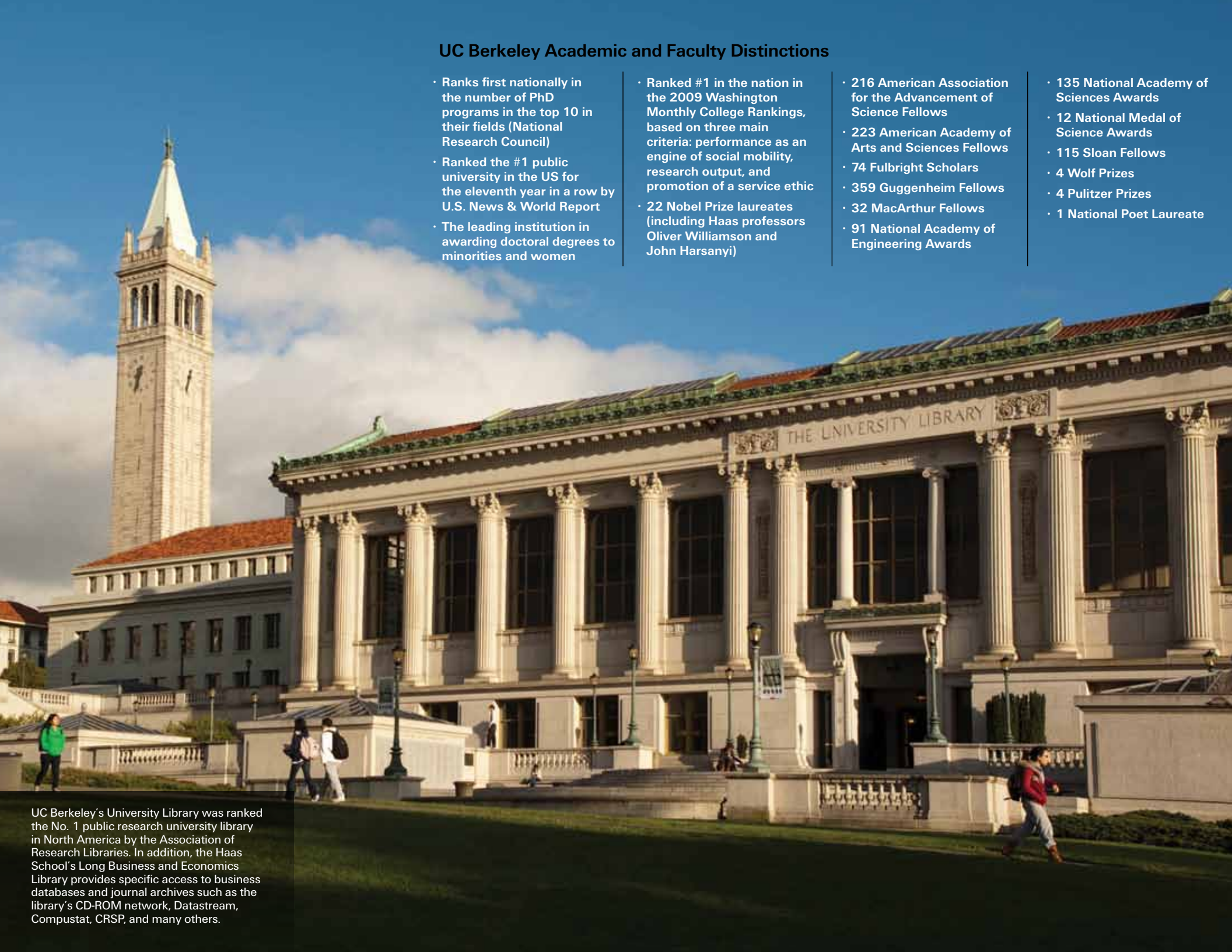
Since its founding in 1868, UC Berkeley has grown with the rapidly expanding population of California and has responded to the educational needs of the developing state. By the 1930s, research at UC Berkeley burgeoned in nuclear physics, chemistry, and biology, leading to the development of the first cyclotron, the isolation of the human polio virus, and the discovery of all the artificial elements heavier than uranium, including Berkelium and Californium. Twenty-one members of the UC Berkeley faculty have been awarded Nobel prizes for these and subsequent achievements in science, literature, and economics. In 2011, the Times of London ranked UC Berkeley the 4th best university in the world. The National Research Council in 2010 awarded UC Berkeley the largest number of high-ranked graduate programs in the US for the third decade in a row—of the 52 programs assessed, 48 were in the top 10 in their categories.

A Legendary Campus Setting

The San Francisco Bay Area is perennially designated the world's most popular tourist destination—and for good reason. The area's stunning natural beauty and seductively benign weather complement an atmosphere charged with a worldly sophistication and a distinctive openness to new ways of thinking. The Berkeley campus is perched on a hillside; its upper reaches are devoted to a vast nature preserve—excellent for a run or a contemplative walk with postcard views of San Francisco, the Golden Gate Bridge, and the Pacific Ocean beyond. Surrounding the campus is the legendary city of Berkeley, the quintessential university town, complete with a multitude of coffee houses, shops, churches, theaters, world-famous gourmet restaurants, charming neighborhoods, beautiful gardens, and some of the best bookstores anywhere.

UC Berkeley Academic and Faculty Distinctions

- Ranks first nationally in the number of PhD programs in the top 10 in their fields (National Research Council)
- Ranked the #1 public university in the US for the eleventh year in a row by U.S. News & World Report
- The leading institution in awarding doctoral degrees to minorities and women
- Ranked #1 in the nation in the 2009 Washington Monthly College Rankings, based on three main criteria: performance as an engine of social mobility, research output, and promotion of a service ethic
- 22 Nobel Prize laureates (including Haas professors Oliver Williamson and John Harsanyi)
- 216 American Association for the Advancement of Science Fellows
- 223 American Academy of Arts and Sciences Fellows
- 74 Fulbright Scholars
- 359 Guggenheim Fellows
- 32 MacArthur Fellows
- 91 National Academy of Engineering Awards
- 135 National Academy of Sciences Awards
- 12 National Medal of Science Awards
- 115 Sloan Fellows
- 4 Wolf Prizes
- 4 Pulitzer Prizes
- 1 National Poet Laureate



UC Berkeley's University Library was ranked the No. 1 public research university library in North America by the Association of Research Libraries. In addition, the Haas School's Long Business and Economics Library provides specific access to business databases and journal archives such as the library's CD-ROM network, Datastream, Compustat, CRSP, and many others.



The Berkeley MFE

Master of Financial Engineering

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