

Career Building Ideas

For College Bound Students



A Discussion With:
Jack M. Gill, Ph.D.



Jack M. Gill, Ph.D.



Native Texan



35 years in Silicon Valley



**B.S.
Engineering &
Chemistry**



**Ph.D.
Organic
Chemistry**

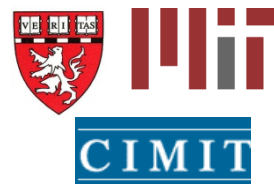


**Lasers,
Chromatography,
Lab Automation,**



Cofounder – 1981

- 7 funds
- \$500 million
- >\$1 billion net made on first \$155 M



**5 years in
Boston,
New England**



**Educational
Philanthropy**



**Board of
Trustees**



**Texas ETF
Emerging
Technology
Fund**



Your Areas of Interest? Career?

Athletics

- Great character builders
- Discipline, training
- Few jobs, short careers

Music Arts

- All of us love music and the arts
- Few jobs, low pay, high satisfaction

Teachers

- Hugely important, passionate pursuit
- Low pay, frustrating

Social and Service Workers

- Great psychological rewards
- People engaging, good careers

Math, Science, Engr, Tech, Med

- Where the most jobs are!
- High pay, great careers

Are You an Entrepreneur?

Jack Gill's Sixteen Characteristics TEST

Rate yourself on each criterion

Put a Number in each box & add up the total

10=extreme

8=high

6=moderate

5=somewhat

3=little

0=none

130-180 BIGE
(Big Time Entr.)

100-130 WANA
(Wanabe Entr.)

70-100 BIBO
(Better in Big Org.)

40-70 CNAE
(Cert. Not an Entr.)

- | | |
|---|---|
| <input type="checkbox"/> Active doer | <input type="checkbox"/> Hates beauracracy |
| <input type="checkbox"/> Highly self-confident | <input type="checkbox"/> Has a better solution |
| <input type="checkbox"/> Natural risk-taker | <input type="checkbox"/> Unafraid of failure |
| <input type="checkbox"/> Restless, unsatisfied | <input type="checkbox"/> Sense of priorities |
| <input type="checkbox"/> Driven, determined | <input type="checkbox"/> Super sales person |
| <input type="checkbox"/> Unconventional thinker | <input type="checkbox"/> Sense of urgency |
| <input type="checkbox"/> Spirited individual | <input type="checkbox"/> Motivates and inspires |
| <input type="checkbox"/> Gets more done with less | <input type="checkbox"/> Sees solutions, Not barriers |

My Total: _____

Entrepreneurs

Why are they so Important?



AEA - Stanford – Harvard Study: 1970

Nothing generates more

■ **Jobs** ■ **Tax revenues** ■ **Exports**

“per dollar invested than dollars invested
in entrepreneurial businesses”

Capital efficiency!

Amazing Snapshot of Entrepreneurship

It Is True That...

There have been more:

- Jobs created
- High income careers
- Wealth created
- Market value created
- New millionaires made
- Taxes paid to government
- Export value shipped
- Global market share earned

by high-tech enterprise in California's Silicon Valley
than any other time or place
in the history of the world

Today, California accounts for over 40% and Boston NE for 18% of new Venture activity. 2/3 of USA

Business Update!

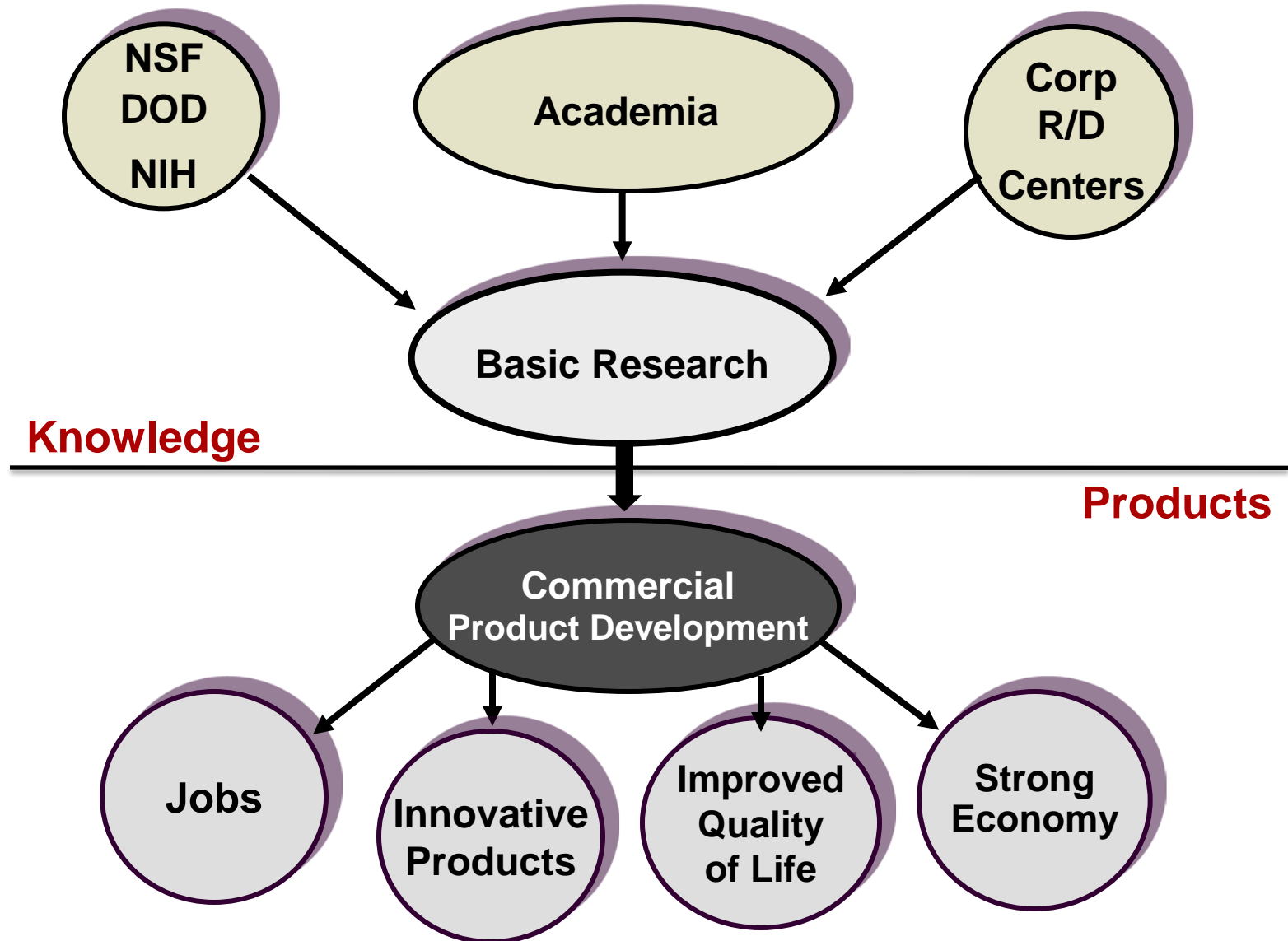
During the '80s and '90s in the USA...

- Over **20 million jobs** in the USA were lost due to corporate mergers, downsizing, consolidations and moving operations offshore.
- Kept US industry in leading positions worldwide
- Fortunately, **35 million new jobs** were created.


**Over 60% of these were
created by high-tech
entrepreneurial startups**

- In **2008-2010**...Another severe cycle of worldwide financial consolidation and recession is happening

Products Come from Commercial Development



Most In-Demand Disciplines



**Where most
jobs are...**

- Chemistry, Biochemistry
- Biology, Genetics, Biotech
- Physics, Photonics
- Medicine, Surgery, Diagnostics
- Electrical Engineer
- Computer Science
- Other engineering fields

- Research & Development \$
- Sales and Marketing \$\$
- Finance & Manufacturing \$\$\$
- MBAs, General Management \$\$\$\$

Highly Attractive Careers

Many Choices, High Pay, Highly Rewarding

- Are you interested in: Science, engineering, or medicine?
- Like to achieve big time, career success?
- Found or co-found own company
- Be CEO or senior manager of a company
- Earn serious, big money
- Run your own show
- Become financially independent
- Do Your OWN Thing!

If this appeals...

ENTREPRENEURSHIP!

Review of the Business World

A. The Big Multinational Companies



WAL★MART



IBM

B. High-growth Companies



Genentech
IN BUSINESS FOR LIFE

C. Entrepreneurial Companies



Google™

twitter

A The Big Multinational Companies

- Tens of \$ billions revenue
- Multinational, Fortune 500
- Growth **5** to **15%** per year
- Dominate large markets
- Manufacturing and marketing in most countries
- E.g.
 - Ford, GE, GM, IBM, HP, P&G, J&J
 - Daimler, Siemens, Roche, Philips, Shell
 - Toyota, Mitsubishi, Samsung, Sony, NEC
- Stable, well-managed monoliths
- Great career opportunities



Great places
to start careers

B The High-growth Companies

- \$500 million to billions annual revenue
- Emerging as multinationals
- Mostly in high growth technology markets
- Growth **20** to **30%** per year
- Pioneering technology leaders
- Manufacturing and marketing in USA, Europe, Asia
- E.g.
 - Cisco, Intel, Dell, Microsoft, Amgen
 - Nokia, Alcatel, SAP, BAAN, Astra Zeneca
 - Taiwan Semiconductor, ACER, Samsung
- Dynamic, aggressive market leaders



Places for entrepreneurs
to accelerate careers

C Young Entrepreneurially Driven Companies

- Revenues... startup stage to a few Billion
- Private, newly public, hot growth
- E.g. • Apple, Google, Twitter
- Pioneering new technologies and markets
- Typical growth **30** to **50%** per year
- Just starting European and Asian operations
- Ideal for mature, fast-track, ambitious people



Catch the wave of opportunities
where entrepreneurs feel at home

Steady Career Development

Get a Good
Education

Great enabler
Tech. B.S., M.S.
plus M.B.A.
Technical Ph.D.

Importance of
Summer Jobs

Show What You
Can Do!
“Energy, Zeal,
Enthusiasm,
Determined
Pursuit”

High-tech Careers
Are HOT

High Growth
High-tech are
Best Paying
Jobs Today!

Advanced Degrees
Are The
Big Ticket

Catch the Wave!
Fast Track
To BIG Time
Sky's the Limit!

- Walk before you run!
- Build great resume
- Lower risk path to big success

Get a Good Education

Importance of Summer Jobs

High-tech Careers Are HOT

Advanced Degrees Are The Big Ticket

Student Era
Learn, Prepare

1. Small Colleges

- Lower cost, easy admittance
- Limited student diversity
- High faculty to student ratio
- Small classes, good interaction
- Often great launch platforms

GOOD!

2. Large Universities

- Admissions very competitive
- Very large student bodies
- Big “Greek” social life
- Rich activities, diversions, etc.
- Out of state is more expensive
- Many great choices...UTA, A&M, U. Hou., IU, UCLA, UF, UVa

Rich Experience

3. Private Colleges

- Harvard, Stanford, Rice, Duke
- Need high SAT/ACT/GPA
- Smaller student body
- Expensive, but scholarships
- Best launch platform
- More competitive culture

Empowering

Remember, colleges and degrees only determine starting position and salary

It's what you do with it

Get a Good Education

Importance of Summer Jobs

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It's what you do with it

Resume Builder

1. Summer Jobs

- Do you like this industry?
- Helps build a network
- Get Hands On Experience
- Especially important to work junior & senior years
- No summer experiences: disadvantage later

2. Other Ideas

- Variety of Scholarships Available
- Co-op programs are available
- Volunteer work always available
- Seek out college planning office
- Plan ahead and work contacts assertively

Real world experience

Mentors, references

Get a Good Education

Importance of Summer Jobs

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- Variety of Scholarships Available
- Co-op programs are available
- Volunteer work is always available
- Learn about college planning office

Hot Companies 30% to 50% Annual Growth

1. Hottest Industries

- Internet, eCommerce, Computers
- Telecommunications
- Medical, Biotech, Life Sciences
- Service Sector

2. The Hot Majors

- Electrical Engineering
- Computer Science
- Chemistry & Biology
- Physics, Photonics
- Business, Economics
- Communications

3. Leading High-tech Centers

- Silicon Valley, Boston, Seattle, Austin

Remember, colleges and degrees only determine starting position & salary

It's what you do with it

Real world Experience

Mentors, references

Science-Engineering based careers

Tech Rules

Get a Good Education

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Importance of Summer Jobs

The Fortune 500

1. Summer Jobs

- Helps determine if you will enjoy a career in your major
- Helps establish a network for job-hunting after graduation
- Provides hands-on experience as valuable as classroom work
- Especially important to work between your junior & senior years to build maturity and credibility and get references
- Students lacking some work experience are disadvantaged

2. Other Ideas

- Huge number and variety of scholarships available
- Co-op programs are available if you need economic assistance and enjoy work
- Volunteer work is valuable if you can't get paying job (hospitals, non-profits)
- Learn early about your college career planning office

High-tech Careers Are HOT

Hot Companies

1. Hottest Industries

- Internet, eCommerce, Computers, Software
- Telecommunications
- Medical, Biotech, Life Sciences
- Service Sector

2. The Hot Majors

- Electrical Engineering
- Computer Science
- Chemistry & Biology
- Physics, Photonics
- Business, Economics
- Communications

3. Leading High-tech Centers

- Silicon Valley
- Boston, New England
- LA, San Diego
- Seattle
- Austin, Dallas, Houston

4. Constant Innovations

- Rapid pace of new product development

Entrepreneurs: Advanced Degrees Are The Big Ticket

MBA, JD, MS, PhD, MD

1. Advanced Degrees

- Fastest ticket to best jobs
- Get MBA after 2-5 years work
- Best MBA programs require work experience to get in
- MS, MD, PhD continue straight from BS

2. Typical Hot Tickets

- BSEE or BS Computer Science
Microsoft, Dell, Cisco,
then get MBA
- BS Chemistry, plus MD or PhD
then join:
Merck, Lilly, Pfizer, J&J
- BS, PhD Informatics
then join:
Cisco, Google, Microsoft,
Oracle, IBM

**Remember, degrees only
determine starting
position and salary**

It's what you do with it

**Summer jobs help
confirm or change
career CHOICES**

Mentors, references

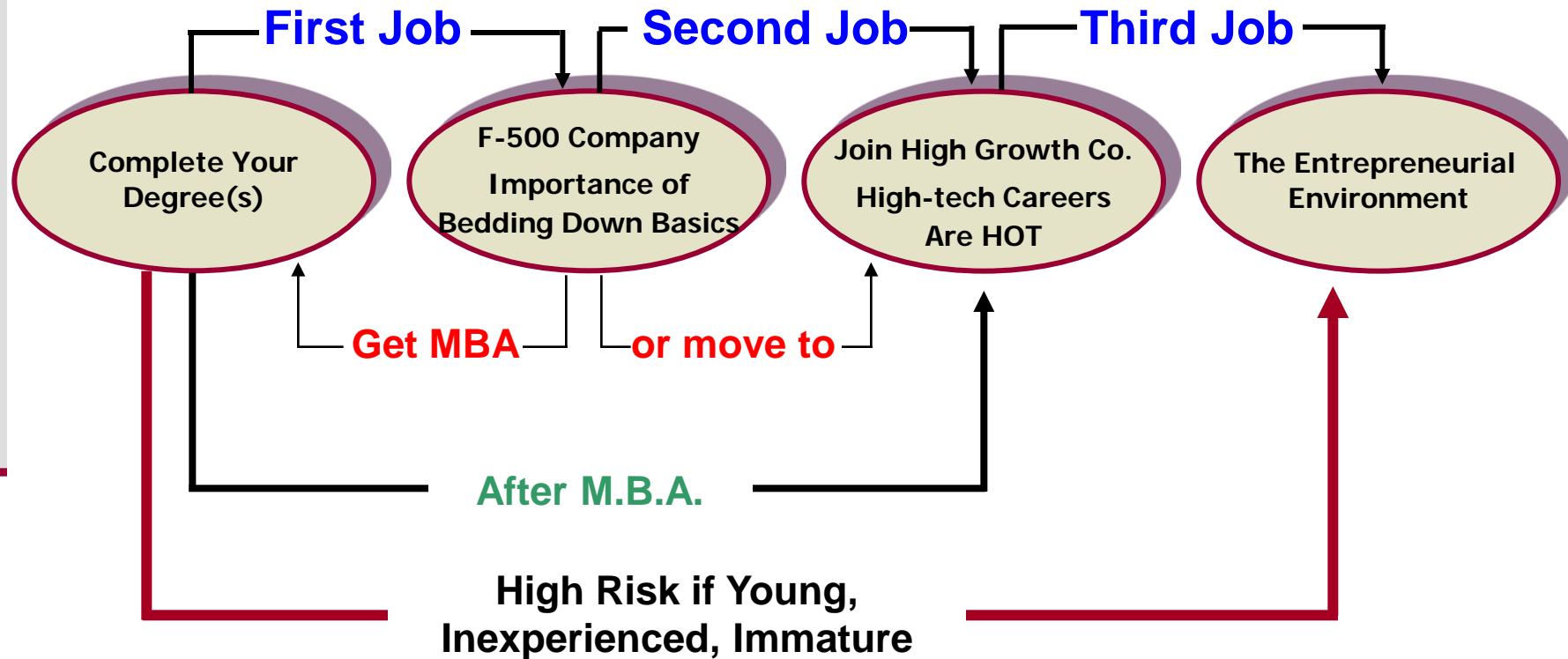
**If good at math and
science, this is where the
high paying careers are!**

Tech Rules

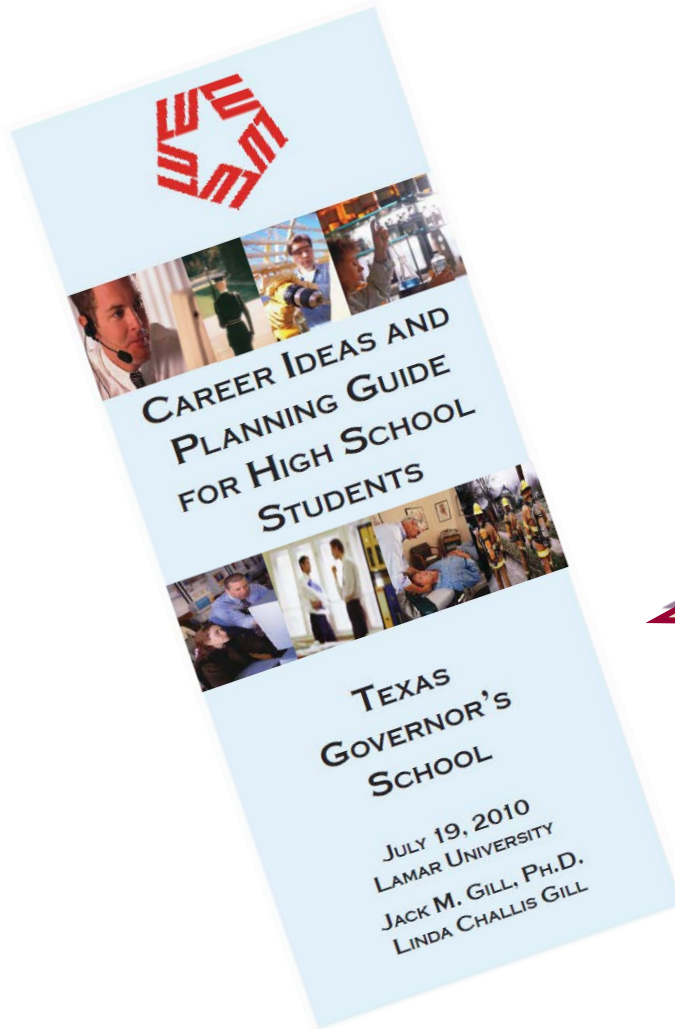
**Advanced degrees and
the entrepreneurial
world:**

The ultimate opportunities

Career Tracking Summary



Gill's High-tech Career Planning Brochure













Career planning
guide and ideas:
based on **40** years
of Silicon Valley &
Boston experience

- Keep in favorite book

- Confer when making career choice

Put a Great Name on Your Resume!

	<u>Company</u>	<u>Yr Founded</u>	<u>Known For</u>
	Microsoft	1975	Software
	Intel	1968	Micro Chips
	IBM	1910	Computers
	Cisco	1984	Networking
	Google	1998	Search
	HP	1939	Computers
	Dell	1984	PC's
	Oracle	1977	Software
	eBay	1995	On-line
	TI	1941	Chips

The Value of an Education

Typical Annual Incomes:

- No College Degree.....**\$30-40K**
- 2 Year Associates Degree.....**\$40-50K**
- 4 Year Degree.....**\$50-100K**
- Graduate Degree.....**\$75-150K**



Highest Paying Jobs Without a College Degree \$30-40K

- \$14.71 Auto Mechanics
- \$16.44 Carpenters
- \$14.02 Welders
- \$19.90 Electricians
- \$17.42 Firefighters
- \$16.64 Food Service Managers
- \$13.70 Plumbers and Pipe Fitters
- \$22.78 Telecommunications Installers/Repairers
- \$20.58 Postal Service Workers
- \$15.97 Truck Drivers
- \$22.01 Police Officers
- \$24.00 Power Plant Operators
- \$15.67 Carpet and Tile Setters
- \$23.33 Line Repairers and Installers
- \$23.26 Rail Transportation Workers
- \$14.70 Real Estate Agents
- \$20.11 Brick Masons and Stonemasons
- \$16.21 Drywall Installers
- \$16.06 Executive Secretaries / Administrative Assistants

Highest Paying Jobs \$40-50K With a 2-year Degree

- | | |
|---------------------------------------|---|
| ▪ \$27.09 Dental Hygienists | ▪ \$28.48 Heavy Equipment Mechanics |
| ▪ \$24.03 Funeral Directors | ▪ \$18.44 Auto Body Repairers |
| ▪ \$21.69 Registered Nurses | ▪ \$17.56 Paralegals |
| ▪ \$20.89 Engineering Technicians | ▪ \$17.51 Cardiovascular Technologists |
| ▪ \$19.97 Court Reporters | ▪ \$16.59 Sales Worker Supervisors |
| ▪ \$19.66 Radiological Technicians | ▪ \$16.58 Machinists |
| ▪ \$18.69 Respiratory Therapists | ▪ \$15.00 Surgical Technologists |
| ▪ \$18.49 Science Technicians | |

Highest Paying Jobs \$50-100K With a 4-year Degree

- | | |
|---|--------------------------------------|
| ▪ \$45.48 General Managers | ▪ \$26.20 Police, Detectives |
| ▪ \$37.24 Managers | ▪ \$24.85 Purchasing Agents |
| ▪ \$33.51 Engineers | ▪ \$24.81 Editors and Reporters |
| ▪ \$33.00 Actuaries | ▪ \$23.76 Librarians |
| ▪ \$32.38 Physician Assistants | ▪ \$23.45 Insurance Underwriters |
| ▪ \$31.05 Surveyors / Mapping Scientists | ▪ \$23.22 Architects |
| ▪ \$30.11 Securities / Financial Sales | ▪ \$23.19 Computer Programmers |
| ▪ \$29.36 Computer Systems Analyst | ▪ \$22.79 Occupational Therapists |
| ▪ \$29.16 Secondary School Teachers | ▪ \$22.59 Accountants / Auditors |

Highest Paying Jobs \$75-150K That Require a Graduate Degree

- \$ 61.19 Physicians
- \$ 59.28 Dentists
- \$ 39.00 Professors
- \$ 38.76 Lawyers
- \$ 38.53 Optometrists
- \$ 37.94 Judges
- \$ 36.66 Physicists / Astronomers
- \$ 33.87 Financial Managers
- \$ 31.40 Chiropractors
- \$ 31.23 Chemists
- \$ 31.10 Pharmacists
- \$ 29.85 Geologists
- \$ 29.07 Economists
- \$ 27.03 Psychologists
- \$ 26.71 Speech Therapists
- \$ 25.33 Management Analysts
- \$ 25.03 Medical Scientists
- \$ 23.93 Urban Planners
- \$ 22.85 Physical Therapists

Summary for Fast-Paced Careers

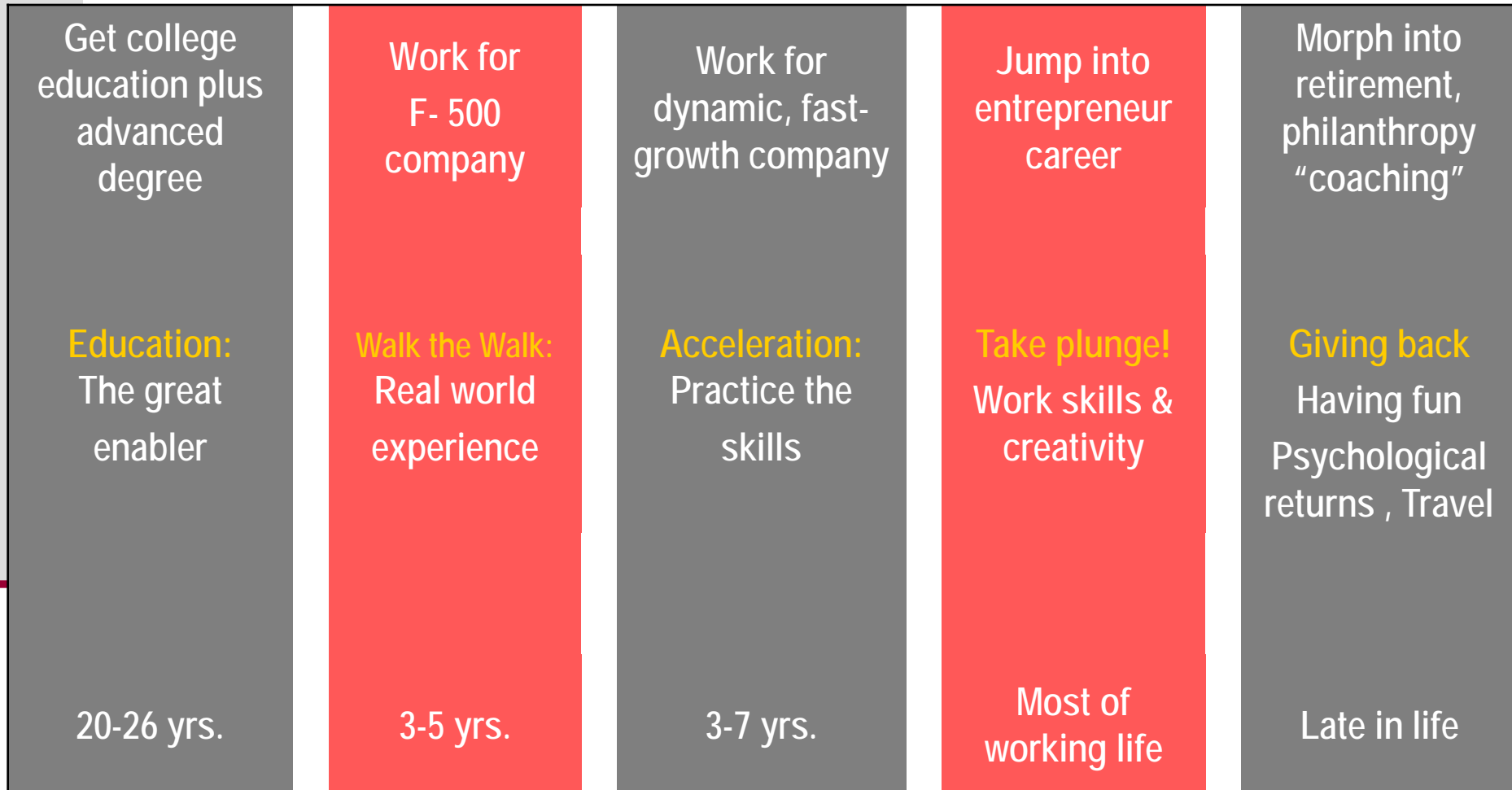
- Create your **own version** of career goals
- Find ways to **leverage** skill sets
- Pick **dynamic growth** industries
- Identify **movers** and **shakers (Mentors)**
 Adopt, emulate, befriend, learn from
- Pursue **lifelong learning** opportunities
- Set goals, **milestones**, check points
- Travel in the **fast crowd**
- Stay focused, **determined**, committed
- Seek a **balance** in life

America's Best Cities for Young Professionals













1. Houston
2. Washington DC
3. Minneapolis- St. Paul
4. NYC
5. Boston
6. Dallas
7. Seattle
8. Denver
9. Atlanta
10. Austin

Universal Model, Timeline...

For A Successful and Productive Life



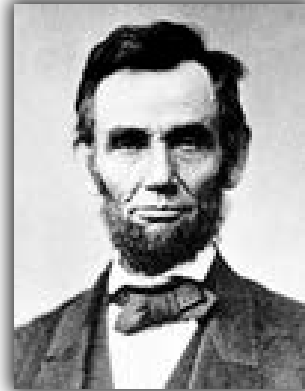
In the spirit of full disclosure: Jack Gill's Timeline

Texas Native	Monsanto	Varian	Spectra Physics	Vanguard	Teaching & Philanthropy
<p>BS Chem/Engr.</p> <p>PhD Chemistry</p>	<p>Science & R/D Mngt.</p>	<p>"MBA of Hard Knocks"</p>	<p>Entrepreneur Founder-CEO Computer Company Merged into SP</p>	<p>VC Founded Vanguard '81</p> <p>\$500M 150 CO's</p>	<p>Gill Foundation of Texas Harvard, MIT, Rice, IU, UK, Stanford, UT</p>
					
25 yrs.	2 yrs.	5 yrs.	9 yrs.	25 yrs.	Rest of Life
					

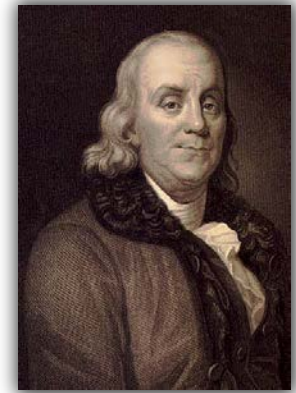
Advice from Hugely Successful People



Bill Gates



Abraham
Lincoln



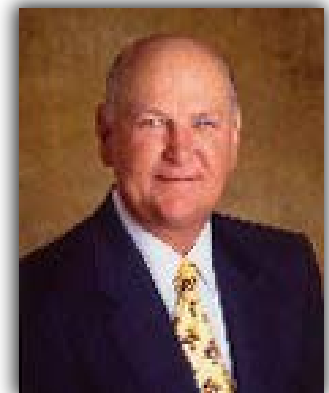
Benjamin
Franklin



Dr. Pierre
Curie

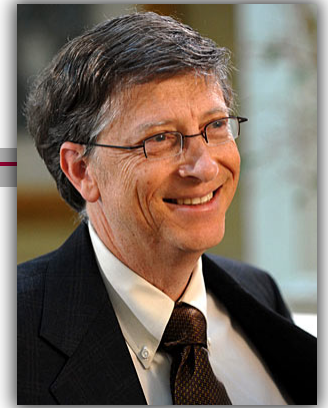


Napoleon Hill



Wayne
Huizenga

Bill Gates Philosophy



Bill Gates

1. Life is **not fair** – get used to it!
2. The world **won't care** about your self-esteem.
3. You will **NOT** make \$60,000 a year right out of high school.
4. If you think your teacher is tough, wait till you get **a boss**.
5. Flipping burgers is **not** beneath your dignity.
6. If you mess up, it's **not** your parent's fault.
7. Before you were born, your **parents weren't as boring** as they are now.
8. Your school may have done away with winners & losers but life **HAS NOT**.
9. Life is **not divided into semesters**.
10. Television **is NOT real life**.
11. **Be nice to nerds**, you will likely end up working for one!

Characteristics of Success Napoleon Hill's

- Curiosity

- Awareness

- Perception

- Ambition

- Patience

- Perseverance

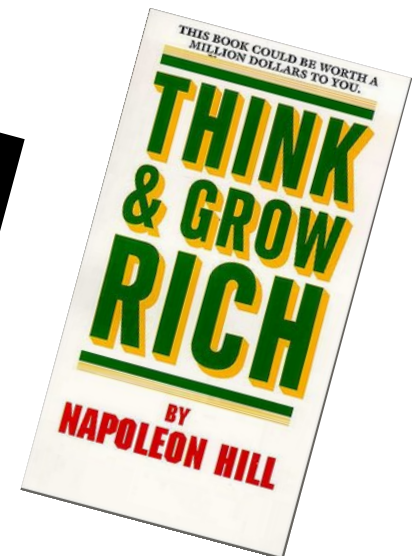
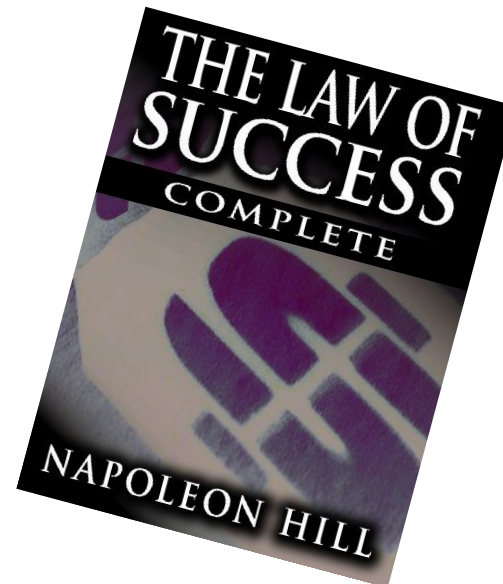
- Positiveness

- Enthusiasm



Napoleon Hill

Sold over
100 million books



Select Entrepreneurial Quotations



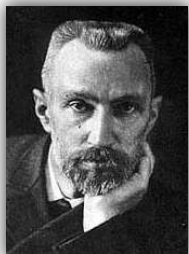
Abraham
Lincoln

"Things may come to those who wait, but only the things left by those who hustle."

"Hard work is the secret to success. If we want to accomplish twice as much as the competition, we've got to work twice as hard."



H. Wayne
Huizenga

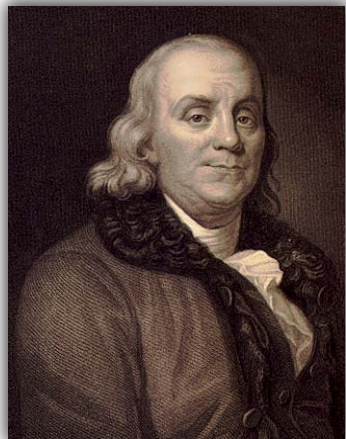


Dr. Pierre
Currie

"Chance favors the prepared mind."

Sage Advice by Ben Franklin

American Pioneer, Patriot, Scientist, Entrepreneur



Benjamin Franklin

"He that can have patience...
can have what he will."

"God helps them that help themselves."

"He that lieth down with the dogs...
shall riseth up with fleas."

"After crosses and losses, men grow
humbler and wiser."

Jack M. Gill, PhD, Founder of Vanguard Ventures

Jack M. Gill, Ph.D.

Jack M. Gill is a member of the Harvard Medical School faculty, a senior advisor to the Harvard-MIT CIMIT program, and teaches at HMS and MIT. Dr. Gill also holds the position of Professor of the Practice of Entrepreneurship at Rice University.

Dr. Gill is a founder and Managing Member of Vanguard Ventures, a venture capital firm specializing in high technology start-ups, with offices in Palo Alto, California and Houston, Texas. Vanguard manages over \$500 million capital and has been the lead investor in numerous highly successful companies such as Aldus, Digital Microwave, Pyramid Technology, EndoSonics, Mycogen, EndoTherapeutics, Macromedia, Network Appliance, Indigo Medical, CardioGenesis, Advanced Fibre Communications, Ciena, LightSpeed (CISCO), Tut Systems, Digital Island, ZipRealty and Hansen Medical.

Prior to co founding Vanguard in 1981, Dr. Gill was Executive Vice President and Group Manager of the Scientific Divisions of Spectra Physics, Inc. Spectra Physics, formerly a NYSE listed company and later acquired by Pharos, Sweden, was then the world's largest manufacturer of commercial, scientific and industrial lasers and a market leader in chromatography instrumentation.

In 1970, Gill founded Autolab, which pioneered the application of microprocessor-based instruments and computers for chromatography applications. Autolab was sold to Spectra Physics in 1972 and Gill remained as vice president and general manager as the business grew profitably to \$100 M in sales and earned a leading market position.

Gill served as Director of Research and Engineering at Varian Associates from 1965 to 1970 managing a technical staff of 80. Dr. Gill authored 50 technical papers and lectured worldwide on gas chromatography, HPLC, laboratory computerization, and advances in instrumentation.

Jack M. Gill is a native of Lufkin, Texas. He earned a chemistry and engineering degree from Lamar University in 1958 and a Ph.D. in Organic Chemistry from Indiana University in 1963. Gill served as President of the Lamar University Foundation Board of Trustees from 1988 to 1991. He is currently a member of the Indiana University Deans' Advisory Boards of the School of Business and the School of Arts and Sciences as well as a Director of the IU Foundation. Dr. Gill received Distinguished Alumnus Awards from Lufkin High School, Lamar University and Indiana University.

Jack was named a 1999 winner of the *Horatio Alger Award for Distinguished Americans*. In May 2001, he received an honorary Doctorate of Science from Indiana University. In addition, he has received numerous Entrepreneur Awards.

In 2007, Jack was appointed a Trustee of Indiana University and a member of the Board of the Texas Emerging Technology Fund. Jack is a director of the MD Anderson Cancer Center, The Horatio Alger Association, Project HOPE and the Presidents Circle of the National Academies of Science, Engineering and Institute of Medicine.



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