Crafting Your Career (CYC)

Science Career Talks

April 28, 2019, Mumbai

Savita Ayyar, Jaquaranda Tree
Vishaka Mangale, OmiX Research and Diagnostics Pvt. Ltd
Debjani Paul, IIT-Bombay
Lipika Sahoo, LifeIntellect
Subhojit Sen, CEBS UM-DAE
Swagatha Chakraborty, Educational Trust Initiative
Cheryl Travasso, Edelman India
RESEARCH MANAGEMENT CAREERS

SAVITA AYYAR
JAQUARANDA TREE
APRIL 2019
THE WORLD OF RESEARCH

For researchers: juggling time between research and other priorities
RESEARCH AND INNOVATION MANAGEMENT

GRANT MANAGEMENT- PREAWARD

GRANT MANAGEMENT- POSTAWARD

PROGRAM MANAGEMENT

INTERNATIONAL EXCHANGE

ACADEMIC PROGRAMS

RESEARCH ETHICS

INNOVATION MANAGEMENT

PUBLIC ENGAGEMENT

POLICY

BUILDING PARTNERSHIPS
MY CAREER PATH: THE JOY OF SCIENCE

Bachelors in Biochemistry, Sri Venkateswara College, New Delhi

Masters in Biotechnology, AIIMS, New Delhi

PhD in Developmental Biology, Downing College, University of Cambridge

Postdoctoral research, Department of Zoology, University of Cambridge
MY CAREER PATH: WORKING AT THE WELLCOME TRUST, LONDON

Decisions:
• My science versus facilitating someone else’s science
• New learning
• Impact

Steps:
• Good background in science
• Grasping the importance of research funding
• Some administrative experience

Responsibilities:
• Grant management
• Committees
• Researcher engagement
• Team working
• Stakeholder relations

Typical work day:
• Some planned activities
• Some unplanned opportunities
• Deadlines, pressures

Like:
• Seeing good science funded

Dislike:
• Conveying bad news
MY CAREER PATH: WORKING AT THE BANGALORE LIFE SCIENCE CLUSTER

Decisions:
• Working at a funding agency versus offering institutional support
• Building from ground up

Steps:
• Good background in science
• Grasping the importance of research funding
• Strong administrative training at WT
MY CAREER PATH: WORKING AT THE BANGALORE LIFE SCIENCE CLUSTER

Responsibilities:
• Grant management
• Committees
• Researcher engagement
• Team working and team building
• Stakeholder relations

Typical work day:
• Some planned activities
• Some unplanned opportunities
• Deadlines, pressures

Like:
• Seeing good science funded

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• Conveying bad news
RESEARCH MANAGEMENT: STAKEHOLDERS

Scientific leadership
Researchers
Early career researchers
Facility managers

Research Managers and Administrators (RMAs)

External organizations
The India Alliance is pleased to launch the India Research Management Initiative (IRMI)

Strengthening research ecosystems in India

https://doi.org/10.12688/wellcomeopenres.15073.2
RESEARCH MANAGEMENT- TRAINING

Evidence-based Policy Making
A training programme for science administrators and managers

Workshop for Women in Science Administration and Management

Workshop for

WOMEN SCIENCE ADMINISTRATION & MANAGEMENT
Level 1: 26-29 November, 2018
National Centre for Biological Sciences, Bangalore

Focus on confidence-building, motivation and skills development for those in or considering a career in science administration and management.

Applications are invited from women with MSc degree or pursuing PhD/MPhil/doctoral. Those who fulfill any of these criteria and are already employed in a scientific organization may apply too. Selections for the workshop will be made based on qualification, prior experience, a statement on their future career choice and current job (if employed) profile.

Prof. Elora Guarea is currently Associate Dean (Research) at the Faculty of Engineering, Environment and Computing, Coventry University. In her role, she develops and implements the research strategy for the faculty. Prof. Guarea is responsible for fostering a research culture and attracting external funding for over 150 researchers and 200 PhD students. Prof. Guarea's work arms students, support and nurture the growth of research culture in the faculty. Her early career researchers (ECR).

Prof. Guarea has established a research culture that promotes healthy research growth, enabled high quality standards in research from grants proposals writing to research outputs production and effectively staff to self-assess their work, more mentors and supervisors, as well as benchmarks against other universities. Her focus and initiatives have extended to international research partners, specifically in China, Indonesia, India, Brazil, UK and the Philippines.

https://indiabioscience.org/events/workshop-for-women-in-science-administration-and-management

https://www.asci.org.in/index.php/uncategorised/225-science-administration-research-management-2018
LEARN CONSTANTLY AND STEP OUT OF YOUR COMFORT ZONE!!!

“It’s OK to say “I don’t know”. The pleasure is in finding things out.”
Prof Richard Feynman
What’s Outside the Box

Dr Vishakha Mangale
Cofounder OmiX Labs
The Journey

Steps

Key Decisions

Circumstances

Post Doc (TIFR)

Bench Scientist (GE Healthcare)

R&D Head (Beckman Coulter)

Start Up (Mentor, Co-founder)
What do we do at OmiX Labs?

- Isothermal Amplification Platform
- Sepsis Diagnostics
- Molecular Diagnostics
- Molecular AMR Testing
- Rapid, RT Stable, Cost Effective
What do I do at OmiX Labs?

- Lead R&D Function
- Product Development (ISO 13485 Standards)
- Work with Clinical Partners
- Develop Quality Processes for all functions
- Manage Day to Day Operations
Best Part and Worst Part

Best Part
- Launching Product
- Social Impact

Worst Part
- Bureaucratic hurdles
- Raising Money
Challenges

- Technical
- Supply Chain
- Cash Flow
- Attrition
- Customer Acquisition
Skills to Hone

- Problem Solving
- Project Management
- Core Competence
- Network, Mentors
- Calculated Risk Taking
- Leadership Skills
- Regulatory Know How
Jobs in Healthcare

- Qualifications: Masters, PhD, PDF Biotech/Medtech/Genetics/Microbiology/Biochemistry/Bioinformatics Degree
- Job Opportunities: Clinical Scientist, Data Scientist, Product Developers, Quality Control, Product Specialist, Application Specialist, Technical Sales specialist, Contract Researchers
- Internship/Apprenticeship which will teach you more
- Gain more peripheral skills: Regulatory courses/clinical data management/project management/Bioinformatics
Peripheral Skill Development

- CDSCO Workshops and Trainings
- Biocon Academy for Bridging the Gap
- Informatics Course Workshops at IBAB
- Mentoring for Start ups from BIRAC Venture Centre Pune, C-CAMP
- IP Skills
- PMP
- Executive MBA (part time)
Industry trends

Startups Trending: Opportunity to learn. Entrepreneurship opportunities.

Push and support from Govt: Skill India, Funding, Incubators, Accelerators

India Market: Investor Traction
Incubation and Funding opportunities for BioTech/MedTech Startups

- 16 Bioincubators in India. Eg: IKP, BBC, CCAMP, Venture Centre, IITs
- BIRAC Schemes: BIG, SBIRI, BIPP
- Other Govt Grants: Idea to PoC, Elevate 100
- Other Grants: Villgro Foundation, Grand Challenges, BIRAC-TIE
- Soft Loans: DST-TDB
Lessons learnt

- Don’t be afraid to let go
- There is no short cut to success
- Don’t get into a Job Jail
- Take calculated risks
Thank You
Crafting my career: from physics to healthcare research

Debjani Paul

Associate Professor
Department of Biosciences and Bioengineering
Indian Institute of Technology Bombay
What does my lab work on?

Using microfluidics for
• point-of-care diagnostics (e.g. TB, malaria, sickle cell disease)
• biological physics

Diagnostics
• Cell sorter
• Mobile phone microscope

Biological physics
• Measure elastic constants of single cells
A winding path through different disciplines

B. Sc. (3 years; physics)

Integrated PhD (8 years; physics, bioinstrumentation)

Postdoc (6 years; microfluidics, electronic devices & sensors, biological physics)

Industry (1 year; diagnostics and drug delivery)

Academic (since 2012; biomedical engineering)
How did I decide upon academia?

http://www.careers.cam.ac.uk

• During postdoctoral stint
• Different career workshops (media, non-profit sectors, industry, academia)
• Spoke to many people

Specific to academia

• Day-long workshop on jobs in academic sector for postdocs.
• One-on-one chats with other academics, and university’s career counsellors
• Support from advisors and mentors
What is my typical day like?

**How Professors Spend Their Time**

- How they actually spend their time:
  - Teaching: 59%
  - Research: 18%
  - Service: 23%

- How departments expect them to spend their time:
  - Teaching: 20%
  - Research: 175%
  - “Service”: 20%

- How professors would like to spend their time:
  - Don’t tell me what to do

**The Evolution of Intellectual Freedom**

- Before grad school: I’m going to research whatever I want!
- Grad student: I’m going to research whatever my professor wants!
- Assistant professor: I’m going to research whatever my tenure committee wants!
- Tenured professor: I’m going to research whatever my grant committee wants!
- Emeritus professor: I’m going to research whatever I want!
- “Research In Peace”

www.phdcomics.com
What is my day *really* like?

No typical day. Highly flexible.

- Teach classes & lab; prepare for lectures; exams
- Outreach
- Mentor my students in their projects
- Write grant proposals, progress reports to funding bodies
- Write manuscripts with my students
- Learn, think
- Review others’ manuscripts, grant proposals
- Sit on other students’ committees
- Manage teaching and research facilities
- Serve on departmental and institutional committees
- Deal with purchase and other paperwork
- Manage lab budget and plan finances
- Interview and hire people for the lab
- Masters and PhD admissions
<table>
<thead>
<tr>
<th>What do I like/dislike about my job?</th>
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<tr>
<td><strong>Like</strong></td>
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<tr>
<td>Love to teach</td>
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<td>New ideas</td>
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<td>Flexibility</td>
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<td>Trying to understand new data with students</td>
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<tr>
<td>Sharing our work in talks + manuscripts</td>
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<tr>
<td>Hands-on work in the lab</td>
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</tbody>
</table>
What skills and qualifications do I need?

• PhD + publications (Assistant Professor positions need three years of postdoc/post-PhD experience in IITs). Tailor your application to the institute’s advert.

• Giving good talks prepares you for classroom teaching.
• Learn to write research proposals.
• Offer to teach a tutorial.
Present academic job market in India

• 24,000 PhDs in all disciplines from about 900 institutions in 2017

• About 800 chemistry PhDs in a year

• IIX/NIT/CSIR/DAE institutes employ ~ 200 chemistry PhDs in a year. Similar numbers in other sciences.

• Many institutes have an upper age limit (35 with a little flexibility) for assistant professor positions
Lessons learnt from my journey

• Keep an open mind about different career options. There is no single correct career path.

• Not joining academia after a PhD is not a failure.

• A PhD training gives you many transferrable skills. Highlight them.

• Training in a particular discipline does not matter today. Be open to learning from other disciplines.

• What do you like to do? What are you good at? Talk to lots of people about their jobs to find out where you fit.
Crafting your Career
A winding path

28th April 2019

Lipika Sahoo PhD, PGDIPRL, PGCBM, MPWE.
Indian Patent & Trademark Agent
Founder & CEO
Lifeintelect Consultancy Pvt. Ltd.
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Victor Menezes Convention Centre,
IITB Campus, Powai, Mumbai 400076
CIRCUMSTANCES

NLSIU

XIMB

CONSULTING

COMPANY

LAW

MANAGEMENT

TEAM

AWARD
Exclusive rights related to creations of the mind: inventions, literary and artistic works, symbols, names, images, and designs-monopoly is assigned to designated owner by the state

1. WORK WITH: Great professor, Writers, Painter, Artists, Established companies ..... 

2. PRODUCTS/ SERVICES 
   Cancer drugs to blockchain to computer vision to drone technology

3. ALWAYS LEARNING NEW: NOVEL & INNOVATIVE IDEAS

4. OPPORTUNITY TO HELP INDIVIDUALS, COMPANIES
Understanding Client’s Business, Simple To Complex Technologies, Advising Innovators

Suggest Adequate Protection

Protecting IP Rights: Patent, Trademark, Copyrights, Design, Geographical Indication
A TYPICAL WORK DAY

- Client Consultation
- Drafting & Reviewing
- Filing Applications, IP Office Actions
- Coordinating With Foreign Councils
- Speaking Engagements
THINGS LIKE MOST

- Analysis & Strategic Inputs
- Helping Clients To Grow Their Businesses
- Getting A Patent Grant, Registering TM & Design
- Value We Add
THINGS LIKE LEAST

- Lots Of Paper Work
- Lots Of Deadlines
MAIN CHALLENGES

Time
Getting Information

Changing dynamics of IP Law

Resource
With necessary knowledge & skills
SKILLS WE APPLY MOST

GOOD COMMUNICATION SKILL

UNDERSTATING IDEA & BUSINESS

COMMUNICATION

SUBJECT

BIZ

TEAM

SUBJECT MATTER EXPERTISE

DELEGATION & TEAMWORK
HOW CAN ONE GAIN THESE SKILLS

COMUNICATION & UNDERSTANDNGS

- More Of Reading *Variety Of Topics*, Practice Listen, Ask Questions
- Be Precise, Be Specific, Each And Every Word Counts

SUBJECT MATTER EXPERT

- Build A *Foundation* Of Knowledge
- *Continue* Educating Yourself

TEAMWORK

- Strong Sense Of Group Commitment
- Understand *Team Culture, Norms Of Group*
EDUCATIONAL QUALIFICATIONS AND WORK EXPERIENCE

- **Science**
  - Graduate In Science
  - BSc, BTech, MSc, MTech, PhD

- **IP Law**
  - Patent Law
  - LLB, PAE

- **Writing skills**
  - Patent Drafting, Blog, Content
  - Freelancer, Law Firm

- **Good analytical ability**
  - IP Analytics
  - Internship: Real World Exposure
COURSES & WORKSHOPS

01 ONLINE

The World Intellectual Property Organization

02 DISTANCE LEARNING/FULLTIME (Basic, Advance, Skill Development)


03 LLB/LLM/ SECIAL PROGRAMS

- Patent Drafting
- LLB: Litigation, Agreement Drafting
- IP/Patent Valuation
- IP Audit
- Technology Transfer
- Competition Law
CAREER SCOPE & JOB PROSPECTS
Various Global/ National organizations, Law firms

INDUSTRY IS EXPONENTIALLY GROWING

GROWTH IS EASY, SALARY IS GOOD
But getting a job initially is not very easy: necessary skills & experience.

YOU CAN WORK IN YOUR CORE AREA
Most Graduates: Job not aligned with degree. In IPR mostly you work in core area of your technological expertise.
India is becoming a hub for start-ups and R&D centres.

Numerous Funding options by Govt & Pvt sector. First track patent examination.

More are more companies are filing patents and creating valuable IPs.
IP law has broad spectrum and dynamic. Unless you plan to start your own IP consulting firm in IPR, it is advisable you pick your element, build your expertise.

First get a real world experience of how is it to work in a law firm/ corporate IP division.

First start small: online course, small internship etc. If you like it then plan big investment.
YOUR PATH YOUR CRAFT

- Have a creative hobby: Dancing, Music, Painting.

- Carve out your niche.

- If you want to have a career choice of Technology, Law, Patent, Innovation and dealing with people:

  IP is a great fit & challenging career option.
THANK YOU
(What) to be or not to be:
Finding the intersection of interest and worth

SUBHOJIT SEN, PhD
RAMALINGASWAMI FELLOW
UM-DAE CEBS (CENTRE FOR EXCELLENCE IN BASIC SCIENCES).
MUMBAI UNIVERSITY, KALINA CAMPUS, SANTACRUZ E. MUMBAI 400098

SUBHOJIT.SEN@CBS.AC.IN
My Journey so far.....

Take-home message: Picking a career is a lifelong never-ending process
What do I do – ensure a variety of tasks at hand

Academic Research

Non-Academic duties

Conferences and Science awareness

Education Intra and inter Institutional
For Researchers:
Take-home message: Identify a broader problem of interest!
How effectively have we been studying this problem?

Relating *in vivo* Chromatin structure to Gene expression

(.... a work in progress)

Genes Silent

Genes OFF

Genes Active

...relevance to Cancer?

Take-home message: Multi-pronged approach

Evolve your tools with the problem! Do not stagnate!
Why do I love what I do

Upcoming Challenges: (challenges my creativity)

- The changing face of ‘Information’ gathering and consumption.
- How Social Media affects inter-personal interactions.
- Increasing shorter attention span within millennials.
- Helping to fertilize ideation to technology.
Gathering Skills from Scientific Research

Laboratory Expertise Research

- Data Management
- Networking
- Finance Management
- Market Research
- Crisis Prediction and management
- Safety / Security management
- Interpersonal Relationships
- Patent / Research management
- Law / Forensics

Aided Learning Portals:
- ONLINE COURSES by Universities in USA, Germany, Italy, Europe etc. including ventures like Coursera.
- Short Diplomas or MPhil courses for specialisations.
- Youtube (informal), TEDx, Online Coaching Classrooms.
- Extramural and Correspondence courses run by multiple Universities.
- Workshops arranged by multiple Science Academies, Societies, and Institutions.
Job Avenues

BSc / Btech
- Paper writing and editing
- Science Policy and Management
- Science Awareness (NGO/Environment sector)
- Project Management/Implementation
- Education Research

MSc / MTech
- Science Journalism
- Scientific writing and editing
- Educators for STEM
- Curriculum design/research

PhD
- Independent/collaborative entrepreneurship (BIG-DBT grants / Start-ups govt/pvt aided)
- Teaching – Higher education
- Online Laboratory/Course designs
- Grant Writing Services.
- Big Data Science

Academic job market slower
Professional job market relatively stronger
Lessons learnt (Dos and Don’ts)

- **TAKE A BREAK:**
  Take an academic break if necessary to figure out what’s next.
  (but do something CONSTRUCTIVE to add to your CV).

- **Maintain DIVERSITY in profile:**
  Try out multiple avenues, Do not pursue a career because someone else told you so.

- **PASSION:**
  Feel passionate about whatever you do, lest work starts to feel like a “job”!

- **AWARENESS of self-worth:**
  Choose your field/venn wisely, it will decide what remedial measures to take to feel ‘complete’.

- **FINANCIAL SECURITY:**
  Make a financial plan for time line of work versus investments, to help you decide what path might be the one suitable forward.

Learn from your mistakes – Evolve with the system
Researcher to educator:
A quest for life-long learning

Dr. Swagata Chakraborty
For Crafting your Career Workshop
@IIT Mumbai, 28-04-19

https://commons.wikimedia.org/wiki/File:Career_Change_Confusion_Cartoon.svg
Urban Dictionary’s definition: “an affliction whose symptoms are loss of life & liberty, general purpose misery, and resentment towards those who are unaffected” and “an euphemism for ‘professional labor camp.’”

The challenge of life, I have found, is to build a resume that doesn't simply tell a story about what you want to be, but it's a story about who you want to be.

Oprah Winfrey
My career track so far......

Freelance Academic Editor
In-house Editor
Assistant Managing editor

Post-doctoral Researcher

Interdisciplinary research in Biomolecular Nuclear Magnetic Resonance

Ph.D. research scholar

Senior-Secondary Teacher
❖ Provides publication support and academic editing solutions to help researchers navigate the complex world of scholarly publishing.

❖ High-impact medical communication solutions for pharma, device, and biotech, globally.

https://www.cactusglobal.com/services
Job Responsibilities

- Editing and reviewing research manuscripts intended for publication, research grant proposals, and other scientific documents of high strategic value

- Overseeing a multicultural team comprising in-house editors and highly skilled freelance editors based across the world

- Supervising timely turn around of jobs, managing team performance, ensuring target compliance

- Mentoring team members and managing knowledge resources

- Analyzing root causes for service failure and implementing strategies to improve service quality
Skills acquired/honed

* Technical writing
* Attention to detail
* Communication
* Time management
* Leadership
* Problem-solving
* Adaptability
* Multi-tasking
* Interpersonal
Organizations:

* Cactus Communications Pvt Ltd, Mumbai
* Novartis, Hyderabad
* Crimson Interactive Pvt Ltd, Mumbai
* Indegene, Bengaluru
* Tata Consultancy Services (Life Sciences & Healthcare)
* Rehoboth Academic Services, Bengaluru
* CBCC Global Research, Gujarat
Pause and reflect
Creativity
Research
Reading about concepts and advancements in science
Continued learning and self-development
Social interactions
Why IBDP curriculum?

The curriculum

❖ is application-based and research driven

❖ is based on inquiry

❖ focuses on conceptual understanding

❖ provides scope for creativity in classroom
Steps toward my goal

Understanding the effective approach for application

- Prepared a well-crafted resume
- Proactively made contacts with IBDP teachers and shared my resume
- Interview call from Bombay International School
- Interview and demo lesson delivery
- Job offer
Job Responsibilities

- Teaching DP Chemistry curriculum to Grade 11 and 12 students through enquiry-based and multimodal instruction
- Supervising independent research projects in Chemistry: Extended Essay and Internal Assessments
- Conducting skill building sessions and practical investigations for developing scientific research skills in students
- Mentoring students in the capacity of a homeroom advisor and overseeing their holistic progress and well-being
- Supervising student involvement in CAS (Creativity, Activity, Service)
Being a teacher is NOT an easy job

PREPARING FOR and CONDUCTING CLASSES, ACTIVITIES, LABS

MEETINGS
Challenges

* Understanding the diverse learning needs of individual students in a class

* Finding suitable sources to design innovative and enquiry-based lesson plans

* Deconstructing criteria for assessment

* Understanding the emotional needs of the students
Rewards of the profession

“A teacher affects eternity; he can never tell where his influence stops.”
Henry Brooks Adams
Essential transferrable skills acquired during doctoral-level scientific training

* Research and analytical skills
* Critical thinking skills
* Technology skills
* Written Communication skills
* Project Management
* Collaboration
* Public speaking
* Resilience and perseverance
Desirable Qualities/Skills of an Educator in International Curricula

- Content expertise
- Research skills
- Critical Thinking
- Passion and Creativity
- Technology skills
- Open-mindedness
- Communication
- Organization
- Collaboration
- Leadership
- Risk-taking
- Empathy
Currently there are 469 international schools located throughout the country, attended by 268,500 students.

The international schools market in India is on the cusp of significant expansion, creating a need for better teachers.

In the last five years, the number of international schools in India has grown by over 45%, while student enrolment has increased by over 70%.

(IS_magazine_-_India_all_set_for_international_education_expansion_-_2018.pdf)
IB Schools in India

151 IB World schools in India currently offer one or more of four IB programmes

- Primary Years Programme offered by 80 schools
- Middle Years Programme offered by 32 schools
- Diploma Programme offered by 125 schools
- Career-related Programme offered by 1 school

www.ibo.org/jobs-and-careers/

Geographical distribution of schools offering IBDP curriculum in India
“Find out what you like doing best, and get someone to pay you for it.” — Katharine Whitehorn

✔ Build a concise, well-crafted resume
✔ Get involved in education initiatives such as science fairs, Olympiads or Teach for India
✔ Make connections with professionals in the field
✔ Stay updated on job opportunities in the field (Recruitment period for IB schools: November – February)
✔ Recruitment specialists: The Head Hunters, Search International
* Apply with a well-drafted cover letter highlighting your enthusiasm and suitability for the position
* Follow up on the application
* Prepare for interviews
* Be confident about your capabilities and skills
* Stay positive and motivated throughout the process
Online courses on pedagogy:
Harvard Project Zero Online Courses ([www.pz.harvard.edu](http://www.pz.harvard.edu))

- Creating Cultures of Thinking: Learning to Leverage the Eight Forces that Shape the Culture of Groups, Classrooms, and Schools
- Making Learning Visible: The Power of Group Learning and Documentation in Classrooms and Communities
- Teaching for Understanding: Educating for the Unknown
- Thinking and Learning in the Maker-Centered Classroom
- Visible Thinking: Building Understanding through Thinking Routines and Dispositions

**TES (formerly Times Educational Supplement) [www.tes.com](http://www.tes.com)**

Educational materials, jobs, news and courses for teachers and school leaders.
Masters in Education offered by:

- Stanford University, USA
- Harvard University, USA
- University of Oxford, UK
- University of Hong Kong, Hong Kong
- University of Cambridge, UK
- Murdoch University, Australia
- Edith Cowan University (ECU), Australia
- University of the People, USA

(IB recognized online M.Ed. Course; free registration)
“The only way to do great work is to love what you do. As with all matters of the heart, you'll know when you find it. And, like any great relationship, it just gets better and better as the years roll on. So keep looking until you find it. If you haven’t found it yet, keep looking. Don’t settle.” —Steve Jobs
A Career in Science Communication

Notes from the Workshop

Cheryl Travasso, Ph.D.
Content writer and Health strategist
Most people associate science communication only with manuscript writing and science journalism.

While both of these are important facets of science comms., they represent only a part of this developing field.
My journey so far
Careers can take interesting detours sometimes… just like an experiment

• You plan an experiment, thinking you know what the outcome will be
• The experiment gives you an unexpected finding
• You find the observations reproducible
• You decide to see where the findings lead!
The beauty of science communication: variety

- The variety of clients with whom you can work
- The variety of subjects on which you work
- The variety of audiences for whom you write
Content for different audiences, to serve multiple purposes

<table>
<thead>
<tr>
<th>PHARMA &amp; ASSOCIATIONS</th>
<th>CONSUMERS</th>
<th>PUBLIC</th>
<th>PATIENTS</th>
<th>DOCTORS</th>
<th>HEALTHCARE PROFESSIONALS</th>
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<tbody>
<tr>
<td>Press releases and notes</td>
<td>Newspaper articles and advertorials</td>
<td>News updated on doctor portals</td>
<td>Newsletters</td>
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<td>Narratives</td>
<td>Website news stories (bylined)</td>
<td>Visual aids and detail aids</td>
<td>Training slide decks</td>
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<td>Briefing documents</td>
<td>Consumer-friendly website content</td>
<td>Publication summaries</td>
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<td>Communications and brand strategy</td>
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*Content is co-created with the client and other experts and must receive all the necessary approval before being available in the public domain*
Perks of a career in this field

- A combination of science with communication and expression
- Opportunity for creativity
- Opportunities to pitch an idea/strategy
- Intense, but a more proportional balance between effort and results
What may seem challenging

- Tight deadlines, multiple stakeholders
- Having to delve into issues that are initially completely new to you
- Being required to switch communication styles many times a day, depending on your audience
- Knowing exactly what you need to communicate
Then again, some challenges stay the same no matter where you go! 😊
Skills and Qualifications
A science communicator’s toolkit

A strong scientific background*
A passion for research
Scientific accuracy
An ability to simplify complex scientific concepts
Readiness to work on diverse topics
Language skills
Strong vocabulary
An eye for detail#

*Personal opinion
#Did you catch the typo?
Tips to sharpen your skills

Read as much as you can about the subject
Just – read!
Never neglect grammar

Do an online course or a formal course

Practice
Find a mentor
Qualifications

Any Masters or Ph.D. degree in science

Any medical degree

Then again, there is no rule here. There are brilliant science communicators who do not have a science degree but effectively communicate science with clarity, accuracy and simplicity.
A high science degree e.g. a Ph.D. is valuable...

... for the following reasons:

• It teaches you to think, critique, troubleshoot, problem solve and grasp new information quickly

• It teaches you to be scientifically accurate

• You know where to look for credible information

• The degree lends credibility to the work you do.

• You can easily interact with the experts in your client team
Jobs to Consider
Some job openings to consider

<table>
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<tr>
<th>Medical communication agency</th>
<th>Public Relations agency</th>
<th>Newspaper or News portal</th>
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<tbody>
<tr>
<td>Develop collateral largely for in-clinic use, doctors, healthcare professionals; may also include patients and consumers.</td>
<td>Work with clients to strategically communicate with various stakeholders, primarily through media.</td>
<td>Write news stories for newspapers; or news portals of popular journals/ scientific websites.</td>
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<tr>
<th>Publication support firm</th>
<th>Pharmaceutical writer</th>
<th>Journal publication</th>
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<tr>
<td>Support the communication of research findings and clinical data to the scientific community.</td>
<td>Develop non promotional medical content to support clinical trials; may include some promotional material too.</td>
<td>Plan journal and magazine themes and topics and take part in the review process.</td>
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In recent years particularly, there has been quite a bit of overlap between these careers
Points to remember
• **Careers are not set in stone. It is ok to shift tracks.** It is also ok if things don’t work out.

• **Know what you’re good at.** It helps to have a second opinion.

• **Look for the right kind of mentor.**

• **It’s ok not to have a 10-year plan at the start of something new.** Go where the “results lead you”.

• **If you have the necessary skill set and mindset, then a career in science comms may be just what the ‘doctor’ ordered!**