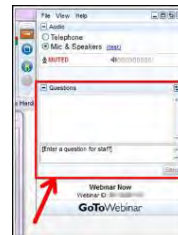
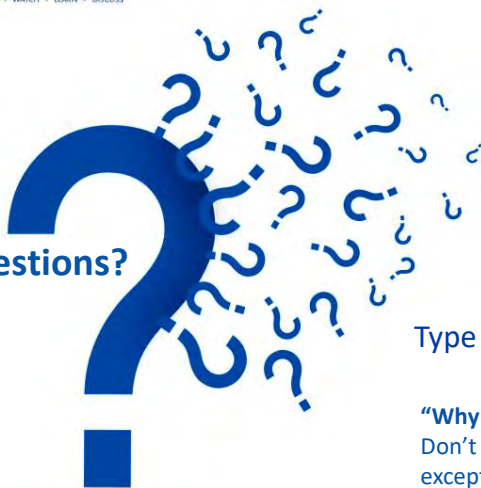




Have Questions?



Type them into questions box!

“Why am I muted?”

Don't worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.

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Why does food taste better when it is grilled or what molecular compounds make a great wine? Discover the delectable science of your favorite food and drink and don't forget to come back for a second helping.

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Business & Entrepreneurship

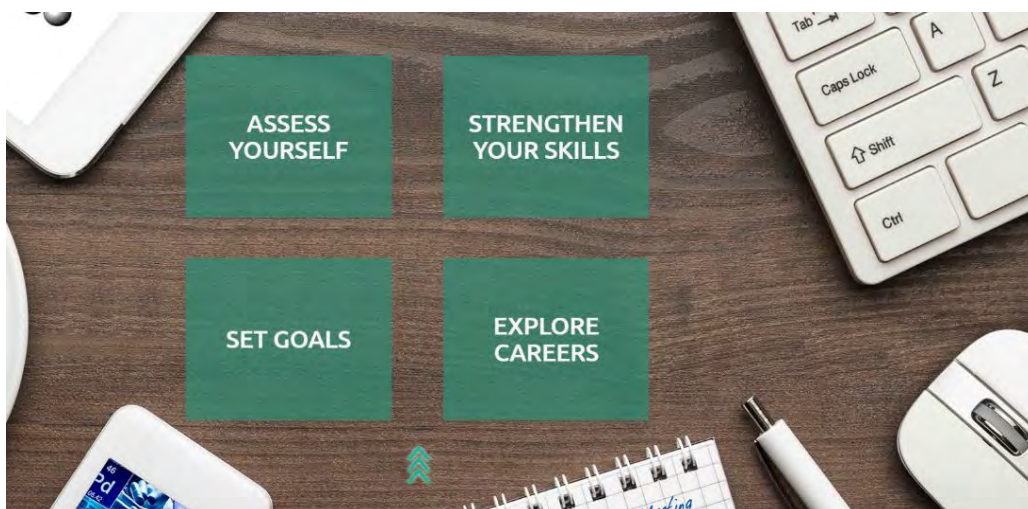
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<https://www.acs.org/content/acs/en/acs-webinars/videos.html>

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An individual development planning tool for you!



<https://chemidp.acs.org>

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From ACS Industry Member Programs

◆ Industry Matters Newsletter

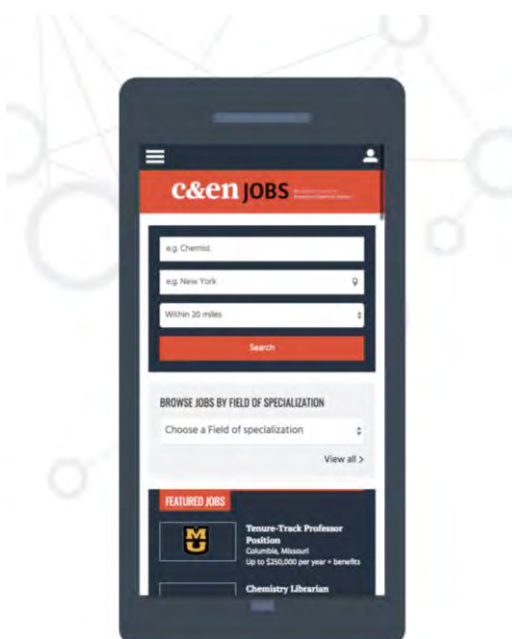
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Tuesday, June 9 from 6-7 pm IST



Ashutosh Sharma, Secretary, Department of Science and Technology, Government of India and ACS Editor, *ACS Applied Material and Interfaces*



Dipankar Das Sarma, J.N. Tata Chair Professor, Solid State and Structural Chemistry Unit, Indian Institute of Science and Senior Editor, *ACS Energy Letters*

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ACS International

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ALTERNATIVE AND NON-TRADITIONAL
CAREERS
 in Chemistry and
 Related Sciences

THIS ACS WEBINAR WILL BEGIN SHORTLY...

9



Alternative and Non-Traditional Careers in Chemistry and Related Sciences



Anubhav Saxena
 President of Research and Development,
 Pidilite Industries Limited



Deeksha Gupta
 Associate Director-India, Editorial, Society
 Programs & Services, ACS

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Outline

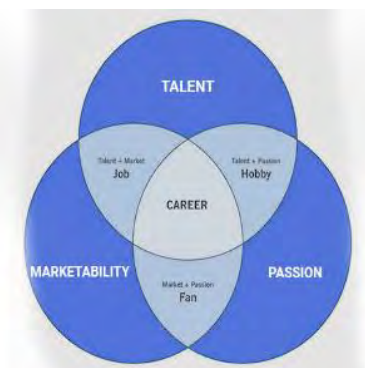
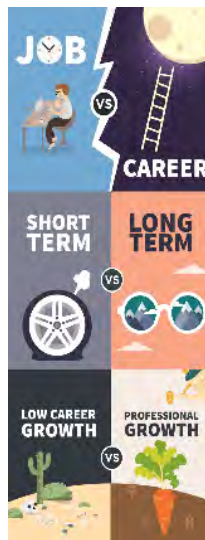
1. Career vs. Job
2. Career management cycle
 - a) Self assessment
 - b) Skill assessment and career objective
 - c) Career development plan
3. Career options in Industry
4. Summary



11



1. Career vs. Job



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What is Career Management?

Conscious & Structured Planning to get -

- Personal fulfillment
- Goal achievement
- Financial security
- Work/life balance



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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



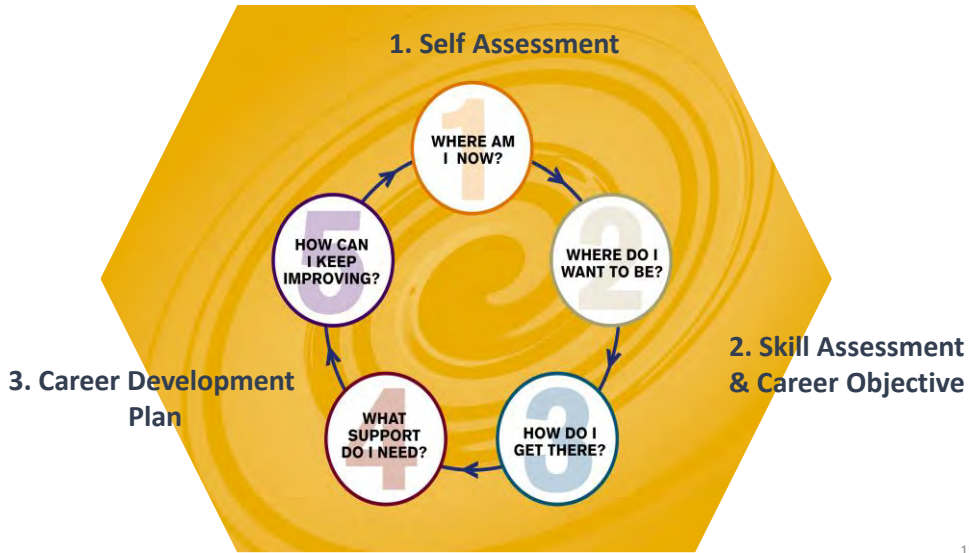
14

Where are you currently in your career?

- Pursuing a Masters of Science
- Pursuing a Ph.D.
- Pursing a Post doc
- Currently working in a job
- Other (Tell us more in the chat)

** If your answer differs greatly from the choices above tell us in the chat!*

2. Career Management Cycle



15

a) Self Assessment

Who am I?

The screenshot shows the ICC Men's ODI Player Rankings. The top batsman is Virat Kohli (IND) with a rating of 895. The top bowler is Jasprit Bumrah (IND) with a rating of 797.

Men's ODI Batting Rankings				Men's ODI Bowling Rankings			
Pos	Player	Team	Rating	Pos	Player	Team	Rating
1	Virat Kohli	IND	895	1	Jasprit Bumrah	IND	797
2	Rohit Sharma	IND	863	2	Trent Boult	NZ	740
3	Imam-ul-Haque	PAK	834	3	Kagiso Rabada	SA	694
4	Francois du Plessis	SA	820	4	Pat Cummins	AUS	693
5	Ross Taylor	NZ	817	5	Mujeeb Ur Rehman	AFG	681
6	Kane Williamson	NZ	796	6	Chris Woakes	ENG	676
7	David Warner	AUS	794	7	Mitchell Starc	AUS	663
8	Joe Root	ENG	787	8	Mohammad Amir	PAK	663
9	Quinton de Kock	SA	781	9	Rasid Khan	AFG	658
10	Jason Roy	ENG	774	10	Matt Henry	NZ	656

Both are stars with very different strengths and SKILL-SET

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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



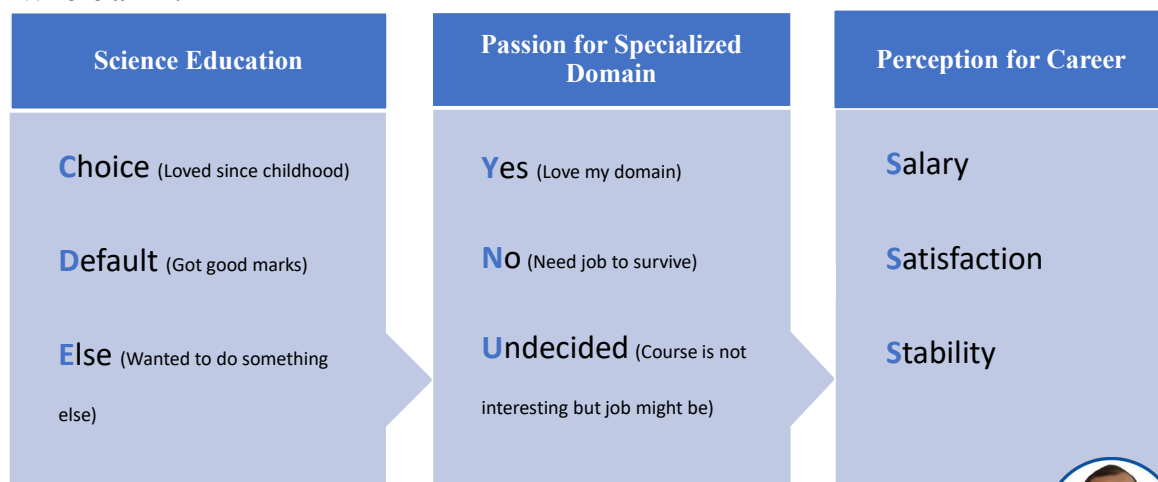
Does your current job/course give you satisfaction?

- I love it and couldn't be happier
- I enjoy it, but I still want something better
- I dislike it and I am currently looking
- I dislike it, but I don't have many choices
- Never thought about it, any job is fine

** If your answer differs greatly from the choices above tell us in the chat!*

a) Self Assessment

Where am I?



Selecting right combination is a KEY for a successful career

18



No silver bullet for career

Perception for Career	ACADEMIA	INDUSTRY
Salary	<ul style="list-style-type: none"> Reasonable compensation 	<ul style="list-style-type: none"> Higher compensation
Satisfaction	<ul style="list-style-type: none"> Autonomy (Control over research direction) 	<ul style="list-style-type: none"> Common team goal - Speed Matters
Stability	<ul style="list-style-type: none"> High job stability 	<ul style="list-style-type: none"> Cutting edge infrastructure Require continuous learning and development

Your strengths and passion should drive your decision

19



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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



What is your career priority?

- Salary
- Job satisfaction
- Stability (less risk to lose the job)
- Other (Tell us more in the chat)

** If your answer differs greatly from the choices above tell us in the chat!*

Science Jobs - Indian Scenario



Statistics

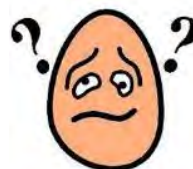
- ~ 35% of faculty positions remain vacant in IITs, IISERs and central universities
- Ratio for academic position and number of applications = 1:250



CAREER COLUMN | 22 JULY 2019

Why earning a PhD is an advantage in today's industry job market

Don't despair if people try to talk you out of pursuing an industry position — your degree can open many doors, says Isalah Hankel.



21

b) Skill Assessment & Career Objectives



22

Tips for Skill Assessment & Career Objectives

- Test both technical and soft skills
- Focus on job Specific skills vs. Generic skill
- Use appropriate skill assessment tools#

ACS tool : Chemidip.acs.org



Research & Development Cycle



Balance



Skill set

<u>Discovery</u>		<u>Development</u>
strategic	—————	tactical
external	—————	internal
customer	—————	code
market	—————	making
business	—————	technology

Source: EBG Consulting | www.ebgconsulting.com

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Skill Building – Ph.D. Example

Ph.D. is more than a degree. A typical Ph.D. normally involves:

- Literature review to understand **research trends** and define **PhD project**
- Conduct **original research** experiments and developing testing protocols
- Analyze the complex research results, **data analysis** and draw conclusions
- Ability to **present research findings** in a comprehensive and precise way in form of **research publications** and presentations in conferences
- **Writing up** thesis and **defending** your thesis in an oral **viva voce** exam



Have you developed these skills?

Skill-sets

Critical Thinking

Creativity

Problem Solving

Conviction

Decision Making

Communication Skills

Emotional Intelligence



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WORLD
ECONOMIC
FORUM
—
IMAGINING THE FUTURE
OF THE WORLD

Top 10 skills

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

*How can we
build these
skills
proactively?*



Source: Future of Jobs Report, World Economic Forum



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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



Have you added any new skills in the last 2 years?

- I continually add new skills frequently
- I have added a new skill or two recently
- I have not added new skills
- Do not know or never thought of it
- Other (Tell us more in the chat)

** If your answer differs greatly from the choices above tell us in the chat!*

c) Career Development Plan



Make an ambitious personal commitment



Develop a roadmap and action plans



Take action



Self-reflection



Tips for Career Development Plan

- Ambitious Goal
- Believe in yourself
- Aggressive but practical timelines
- Find good mentor
- Self-awareness and periodic evaluation



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<p>Academic Careers</p> <ul style="list-style-type: none"> Faculty in Colleges, Universities, and Autonomous Research Institutes Scientist in Research Institutions 	<p>Intellectual Property Rights</p> <p>Technology Transfer</p> <p>Regulatory Management</p>
<p>Non-academic Careers</p> <p>Jobs in Industry</p> <ul style="list-style-type: none"> Research & Development Product Management Quality Control and Quality Assurance Management Human Resource (HR) Management Technical Sales and Marketing Technical Writing Consultancy, Business Development & Equity Research 	<p>Science Communication & Public Outreach</p> <p>Science Management & Administration</p> <p>Science Public Policy</p> <p>Specialized Services</p> <ul style="list-style-type: none"> Core Facility Management Bioinformatics Career in Big Data Science Clinical Trials Management
<p>Bioentrepreneurship</p>	

Career Options

Source: IndiaBioscience



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3. Early Career Options in Industry



Research/ Product Development Scientist

Role and Responsibility	Responsible for designing, undertaking and analyzing information from controlled laboratory-based investigations, experiments and trials for new product development
Technical skills	<ul style="list-style-type: none"> • Expertise on literature survey • Synthetic/formulation expertise • Command on data interpretation
Competencies	<ul style="list-style-type: none"> • Critical thinker • Creativity • Team player • Safety mindset



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Analytical Scientist

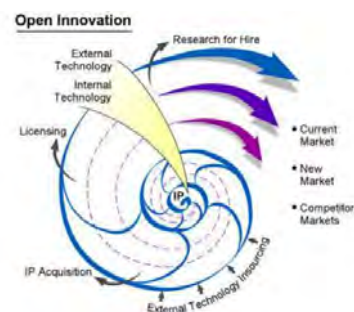
Role and Responsibility	Responsible for detailed characterization of raw materials, intermediates and new products by developing new methods using various instrumentation techniques
Technical skills	<ul style="list-style-type: none"> • Expertise in instrumentation • Strong physical chemistry knowledge • Data interpretation and statistical understanding
Competencies	<ul style="list-style-type: none"> • Analytical mindset • Collaborative thinking • Problem-solving mindset



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Open Innovation Scientist

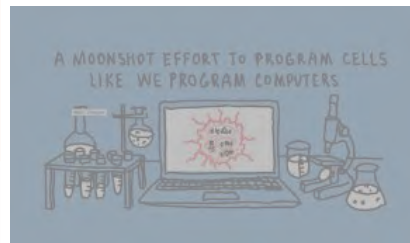
Role and Responsibility	Scouting the new technologies by collaborating external partners to build R&D Innovation pipeline
Technical skills	<ul style="list-style-type: none"> • Broad understanding of different chemistries • Good understanding of market trends • Intellectual property knowledge • Agreement writing skills
Competencies	<ul style="list-style-type: none"> • Analytical thinking • Judgment and decision making • Collaborative thinking • Excellent communication



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Computational Chemist

Role and Responsibility	Computer simulation to assist in solving chemical problems. Use methods of theoretical chemistry , incorporated into efficient computer programs , to calculate the structures and properties of materials.
Technical skills	<ul style="list-style-type: none"> • Knowledge about computer modeling and statistical analysis methods. • Having some background in core material that includes kinetics, thermodynamics and quantum chemistry
Competencies	<ul style="list-style-type: none"> • Analytical mindset • Collaborative thinking • Critical thinking



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Application Scientist

Role and Responsibility	Responsible for developing prototyping as per customer's need and also solve customer complaints
Technical skills	<ul style="list-style-type: none"> • Market trends and application understanding • Formulation and testing expertise • Proficiency in developing tools
Competencies	<ul style="list-style-type: none"> • Customer centricity • Problem-solving mindset • Excellent communication skills • Networking skills



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IP Analyst

Role and Responsibility	Provide following decisions to technology and business teams by thorough patent analysis – a) Filing new patents b) Free to operate new products in market c) Patent landscape- identifying key areas of interest
Technical skills	<ul style="list-style-type: none"> • Expertise on writing & understanding patents • Understanding of patent laws of different countries • IT skills (software usage)
Competencies	<ul style="list-style-type: none"> • Excellent writing skills • Judgment and decision making • Analytical thinking • Customer service mind-set



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Product Stewardship

Role & Responsibility	Provides Environmental/Health/Safety (EH&S) expertise and coordinates input to new chemical product development. Developing and maintaining knowledge of hazard communication requirements.
Technical skills	<ul style="list-style-type: none"> • Knowledge of regulatory compliance • IT skills (SAP etc)
Competencies	<ul style="list-style-type: none"> • Quality & safety mindset • Excellent writing skills • Excellent communication skills



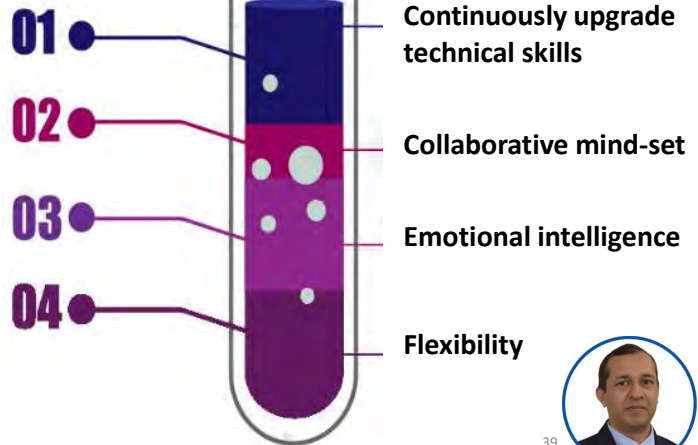
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4. Summary

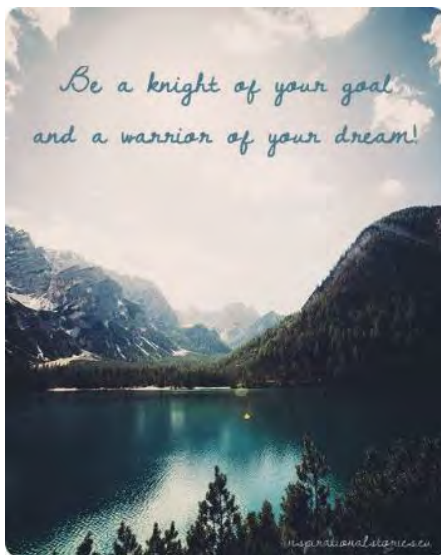
You are responsible for your career

Take Ownership of Everything You Do

- High personal benchmark
- Always focus on your strengths
- Keep a positive attitude
- Respect mentor and leverage effectively-** Learn from feedback quickly



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Thank you

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Alternative and Non-Traditional Careers in Chemistry and Related Sciences



Anubhav Saxena
President of Research and Development,
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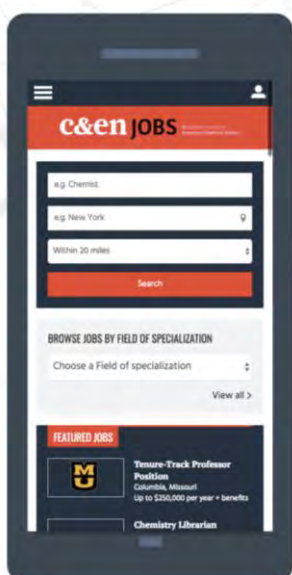
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