Career Pathways in Biomedical Engineering

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Introduction

• Career and employment information for undergraduate and postgraduate students and early career Queensland engineers involved in biomedical applications

• The IEEE provides comprehensive general resources for its members:
  
  ieee.org/web/careers/home/index.html
  – a Career Asset Manager and Navigator,
  – Careers Webinars,
  – Employment Strategies,
  – The IEEE Job Site (jobs.ieee.org/careers/user/login)

• Most of these resources are tailored to the professional engineers and the US market
Early Career Pathway

Undergraduate Student → Undergraduate Activities

Graduation

MSc/PhD

Yes → Post-graduate Activities

No → Job Seeker Priorities

- Undergraduate Student
- Undergraduate Activities
- MSc/PhD
- Post-graduate Activities
- Job Seeker Priorities
Early Career Pathway

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Undergraduate Activities

• Engage in / join professional engineering organizations:
  – IEEE
  – Engineers Australia
  – IEEE, EMBS, QLD (embsqld.org)

• These organisations provide
  – A forum to engage in engineering community activities,
  – Opportunities to attend seminars and workshops
  – A platform to learn about local biomedical industries
Undergraduate Activities

• Seek early professional employment:
  – Check with your lecturer/professor for part time employment opportunity
  – Show interest in (voluntary) short summer internships with local biomedical companies
  – Become familiar with Queensland biomedical engineering industry
  – Have your CV/Resume always updated. Clearly indicate your goals in a Career Objective at the start of your CV
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Job Seeker Priorities

- Job seeker priorities:
  - Updated CV/Resume
  - Clear understanding of selection criteria
  - Understanding of the position description (what the employer wants?)

- Local job sites:
  - Seek (seek.com.au)

- International job sites:
  - IEEE Job Site (jobs.ieee.org/careers/user/login)
  - Biomedical Engineer (biomedicalengineer.com)
  - Biomedical at ScienceAlert (sciencealert.com.au/jobs/biomedical.html)
  - Computer Vision at ScienceVision (visionscience.com/vsJobs.html)
Job Seeker Priorities

• Often the CV/Resume is the first point of contact
• Plenty of care should be given to its form and appropriateness for the particular sought position
• There are numerous sites with recourses on how to write a CV
• It is important to view examples and develop an individual form that suits the person and particular job application
• Consider having an executive summary which gives the employer the chance to get a quick overview without going into details
• Regularly update your CV, even in the no-job-hunting seasons
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Yes

Post-graduate Activities

Undergraduate Activities

Job Seeker Priorities
Postgraduate Activities

• Check local postgraduate opportunities
  – Scholarships (APA/APA Industry)
  – Seek industry scholarships funded by biomedical companies

• Check overseas postgraduate opportunities:
  – Academic jobs in UK (jobs.ac.uk)
  – Academic jobs in US (chronicle.com/jobs)
  – Academic jobs in EU (academicjobseu.com)

• Avoid sending SPAM letters to academics around the world

• Target particular academics

• Check the presentation:
  “The road towards post-graduate studies”
  (ewh.ieee.org/r10/queensland/embs/RoadTowardsPostGrad.pdf)
Biomedical Engineering Professional Career Planning

1. Self-Assessment
2. Setting Direction
3. Gap Analysis
4. Planning Your Development
5. Implementation
Biomedical Engineering Professional Career Planning

1. **Self-Assessment**
2. **Setting Direction**
3. **Gap Analysis**
4. **Planning Your Development**
5. **Implementation**
Self-Assessment

• Assessing Current Job Satisfaction
  – What do I enjoy most about my present job?
  – What are the least satisfying aspects of my present job?

• Identifying the IDEAL job (dream or reality)

• Making your current job better
• Identifying your talents
• Analysing your accomplishments
• Identifying your competencies
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Setting Direction

• Writing vision statement
  – “I will become the director of research for the Company”
  – “I will enhance the competitiveness of the company by shaping its technological direction”
  – “I will be issued more patents than any other engineer in the company”
  – “I will contribute to the company’s success by developing technologies that reduce country’s dependence on fossil fuel”

• Setting your goals

• Reality check
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Gap Analysis

• Networking and interviewing

• Researching the opportunities

• Analysing the gaps
  – Required competencies (talents, knowledge, skills, behaviours)
  – Competencies you posses/lack
Biomedical Engineering Professional Career Planning

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Development Planning

• Growing in your current job
  – Improving the current job

• Developing yourself for success in the next job
  – Short term goals (one to two years)

• Positioning yourself for long-term success
  – Long-term goals (+3 years)
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Implementation

• Revising your plans
  – Being able to adapt them to changes in circumstances

• Getting support from others
  – Share your plans with others (getting feedback)
  – Turn your colleagues into coaches
  – Find someone to compete with
  – Get your immediate manager involved
Final Statements

• Use the principle that sustainable career vitality is only possible when your needs, as well as those of your employer, are satisfied.

• If either your needs or those of your organization are not met, you will undermine the long-term relationship with a perception of inequity.

THANK YOU