



Biomedical Engineer for Government Jobs

**Semahat Demir, Ph.D.
Program Director
Biomedical Engineering Program
National Science Foundation**

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EMBS
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Outline

- My career journey
- Attributes of biomedical engineers for government jobs

Part 1:

My Career Journey

Semahat S. Demir, Ph.D.

My Education and Research

- **Robert College, Istanbul, Turkey**
 - Junior & Senior High School Diplomas
- **Istanbul Technical University, Istanbul, Turkey**
 - B.S. degree in Electronics & Telecommunications Engineering
- **Bogazici University, Istanbul, Turkey**
 - M.S. degree in Biomedical Engineering
- **Rice University, Houston, TX, USA**
 - M.S. degree in Electrical & Computer Engineering
 - Ph.D. degree in Electrical & Computer Engineering
- **Johns Hopkins University, Baltimore, MD, USA**
 - Postdoctoral Certificate in Biomedical Engineering, School of Medicine

My Career Journey

- **Industry (Germany, Turkey)**
 - Intern
 - medical x-ray research engineer, medical laser engineer, technical manager
- **Academia (USA, Canada, Turkey)**
 - Graduate student, postdoc, faculty of biomedical engineering (BME)
- **Government (USA, Turkey)**
 - Funding management/administration
- **Consulting**
- **Professional and Technical Societies**
 - Elected or appointed positions

Active Participation and Leadership Roles

- American Society for Engineering Education (**ASEE**)
- Biomedical Engineering Society (**BMES**)
- Institute of Electrical and Electronics Engineers (**IEEE**)
Engineering in Medicine and Biology Society (**EMBS**)
- Society of Women Engineers (**SWE**)
- Turkish American Scientists and Scholars Association (**TASSA**)

Working in

- Industry
- Academia
- Government
- Independent consulting
- And volunteering in technical societies

Similar knowledge, skills and professional development are NEEDED.

Part 2:

Attributes of Biomedical Engineers for Government Jobs

Your Best Bet for the Future

What technology area, including academia, would you advise students interested in R & D to get involved with?

IEEE Spectrum February 2007

1. Biomedical
2. Wireless/Mobile
3. Energy
4. Academia
5. Nanotechnology
6. Customized Software
7. Aerospace
8. Security
9. Semiconductors
10. Consumer Electronics

BME Workforce for Government

BME Areas:

- Traditional areas
- Emerging areas
- Priority areas
- Interdisciplinary areas
- Classified areas
 - **Basic science & engineering**
 - **Applied science & engineering**

BME Workforce for Government

BME Government Jobs:

- International, federal, state, city, county level government jobs
- National Labs
- Government agencies
- Interns (volunteers)
- Staff of an elected representative or officer
- International (e.g. World Bank, UNESCO)

Government Jobs

- Salaries and promotion scales
- Benefits packages
 - Education
 - Medical, retirements
 - Flex time, telecommute
- Employment terms
 - Permanent
 - Temporary
 - Contractor
- In detail to another government agency/division

Attributes of Biomedical Engineers for Government Jobs (1/4)

- **Strong technical development**
 - Interdisciplinary, integrate knowledge at different levels
 - Critical thinking and questioning; strategic planning
 - Excellent designer and manufacturer
 - Depth and breadth

Attributes of Biomedical Engineers for Government Jobs (2/4)

- **Professional development and “soft” (“interpersonal”) skill development**
 - Team work, conflict resolution, negotiation techniques
 - Written and oral communication and presentation skills
 - Ethics in multicultural and international work environment
 - “Engineering business etiquette”
 - Maintaining the engineering leadership
 - higher-level operational and supervisory control
- **Fundamental knowledge of non-technical disciplines**
 - Economy and business; finance; marketing
 - Public policy making, regulations, law

Attributes of Biomedical Engineers for Government Jobs (3/4)

- **Innovation**
 - Novel ideas
 - Innovation (innovative ideas leading products to market)
- **Must be trained to consider**
 - Safety
 - Reliability
 - Manufacturability
 - Repair ability
 - Maintainability
 - Sustainability
 - Functionality
 - Cost
 - Ecological
 - Societal and environmental implications

Attributes of Biomedical Engineers for Government Jobs (4/4)

- **Life-long learners**
 - explore and challenge your potentials
 - Entrepreneurs
- **Know industry and recent technologies**
 - “real world”; “complex new world”
- **Communicate your engineering and issues**
 - different target audiences
 - raise awareness and educate public
- **Several different careers in professional lifetimes**



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Begin**

