



The Postdoc: Why and How?

Lisa M. Curtis, PhD

lmcurtis@uab.edu

Birmingham AL

Society of Women Engineers annual conference, WE12
November 5-10, 2012

Points to consider



- What is a Postdoc
- Why do one?
- How?
 - Job search process
 - Negotiation
 - Preparation

What is a Postdoc?



*A postdoctoral scholar ("postdoc") is an individual holding a doctoral degree who is engaged in a **temporary period** of mentored research and/or scholarly training for the **purpose of acquiring the professional skills** needed to pursue a **career path of his or her choosing**.*

www.nationalpostdoc.org

Definition of a postdoc as agreed upon by the National Institutes of Health (NIH) and the National Science Foundation (NSF)

Why?



- Retool
- Expand expertise
- Develop independent line of research (academia)
- Cross-disciplinary focus
- Apprenticeship / “Try out”
- Explore non-traditional careers

Why?: Evaluation Process



Evaluate Skills/interests

- Self
- Independent

“Ideal” job

POSTDOC

Now

Define characteristics

- Life goals
- Passion



Edith Clarke

(10 February 1883 – 29 October 1959)

Electrical Engineer

- M.S. in electrical engineering from MIT
Carey, Charles, Jr. "Edith Clarke". American National Biography Online. Retrieved 16 October 2012.
- First female electrical engineer
- First female professor of electrical engineering at the University of Texas at Austin.
Durbin, John. "In Memoriam: Edith Clarke". Index of Memorial Resolutions and Biographical Sketches. University of Texas. Retrieved 16 October 2012.
- First female engineer to achieve professional standing in Tau Beta Pi.
- In 1948, Clarke was the first female Fellow of the American Institute of Electrical Engineers.
- In 1954, she received the Society of Women Engineers Achievement Award.
Hobbs, Amy. "Edith Clarke". Biographical Series. Archives of Maryland. Retrieved 16 October 2012.

How do you find a position?



- Suggestions from grad school mentor or other faculty
- Publications of interest
- Job ads
- Networking at meetings
- Informational interviews
- Social media (LinkedIn, blogs, etc)
- Collaborators
- Colleagues, friends, current/past mentees

“Homework”



- Interview current/past mentees
- Publication search:
 - how many authors?
 - # of pubs
 - How many first-author vs. co-author?
 - Diversity of projects, techniques
- Where are mentees now?
- How many mentees? (track record of mentor)
- Interview/talk to others in field re status of mentor

General Considerations



- Setting of the lab
 - (large vs. small; team vs. working individually; startup vs established; industry vs. academia; association with a university)
- Prestige of laboratory, mentor
- Personal finances
- Long-term prospects in that lab/university/company
- Geographical/family/personal

What can mentor provide?



- Technical expertise
- Resources: time, space, funding
- Role model for career success
 - Children, family, professional partner (work:life balance)
- Sounding board to refine goals/research focus
- Long-term interaction (colleague/collaborator/competitor)
- Contacts/networking



Margaret Hutchinson Rousseau

(1911 - 11 January 2000)

Chemical Engineer

- Bachelor of Science degree from Rice Institute, 1932
- Doctor of Science degree in chemical engineering from MIT, 1937
- First woman to earn a doctorate in chemical engineering in the USA.

MIT Women's Association The 1920s and 1930s

- Designed the first commercial penicillin production plant.

Chemical Heritage Manufacturing a Cure: Mass Producing Penicillin

- first female member of the American Institute of Chemical Engineers.

AIChE Centennial Celebrations Milestones

Job interview



- Job talk
- Expectations
 - Research, teaching, techniques learned
 - Potential projects, research to take w/you
 - Non-bench skills (grantsmanship, writing, opportunity to attend career seminars)
 - Attendance at meetings
 - Interactions with collaborators
- Mentor interactions: formal vs. informal, primary or through another
- Salary, hours, etc.

Negotiation





Elizabeth Muriel Gregory
“Elsie” MacGill

(27 March 1905 – 4 November 1980)

Aeronautical engineer
Aircraft designer
Human rights activist
Author

- Master of Science in Engineering (aeronautics), University of Michigan, 1929
- Doctoral studies at MIT in Cambridge, 1932-1934.

Bourgeois-Doyle, Richard I. *Her Daughter the Engineer: The Life of Elsie Gregory MacGill*. Ottawa: NRC Research Press, 2008. ISBN 978-0-660-19813-2.

- First woman elected to corporate membership in the Engineering Institute of Canada, 1938
- Chief Aeronautical Engineer at Canadian Car and Foundry (CC&F); the first woman in the world to hold such a position
- Designed and tested a new training aircraft, the Maple Leaf Trainer II

"Elizabeth "Elsie" Gregory MacGill." Library and Archives Canada. Wakewich 2006, p. 397

Preparation



- Clear goals, honest communication
- Realistic and clear expectations
- Independent drive / Receptive to advice
- Specific expertise to bring to lab = reciprocity of sorts
- PLAN: short-term, long-term

Preparation: Self Evaluation



- Skills, abilities
- Weaknesses, needs
- Career goals / “Ideal” job
- Career constraints
 - Time, interests
 - Environment
 - Impact on finances, geography
- Personal goals (time for family, partner, leisure)

Preparation: Independent Eval



- Skills, abilities
- Weaknesses, needs
- From whom?
 - Grad mentor, committee member
 - Faculty member
 - Collaborators



Beatrice Hicks

(January 2, 1919 – October 21, 1979)

Chemical Engineer

- First woman engineer to be hired by Western Electric
- Co-founder and first president of the Society of Women Engineers, 1950.
"Beatrice Alice Hicks". IEEE Global History Network. Institute of Electrical and Electronics Engineers.
- Society of Women Engineers Achievement Award, 1963
- Bachelor's degree in chemical engineering from Newark College of Engineering (now New Jersey Institute of Technology), 1939.
- Invited to join the National Academy of Engineering, 1978; the sixth woman to join the organization

James, Edward T.; James, Janet Wilson; Boyer, Paul S. (2004). *Notable American Women: A Biographical Dictionary, Volume 5: Completing the Twentieth Century*. Cambridge, MA: Belknap Press. ISBN 978-0674014886.

Plan



- IDP (FASEB)
 - Modify to fit
- Global perspective (career, research, personal)
- Develop independently and with mentor
- Revise, review and redirect: semi-annually, more often?, less often?

Plan



- Postdoc vs. mentor responsibilities
- Goals, expectations
- Projects, potential papers
- Specific techniques acquired
- Timeline
- Grants, career development
- Date for review



Margaret Ingels

(October 25, 1892 – December 13, 1971)

Mechanical Engineer

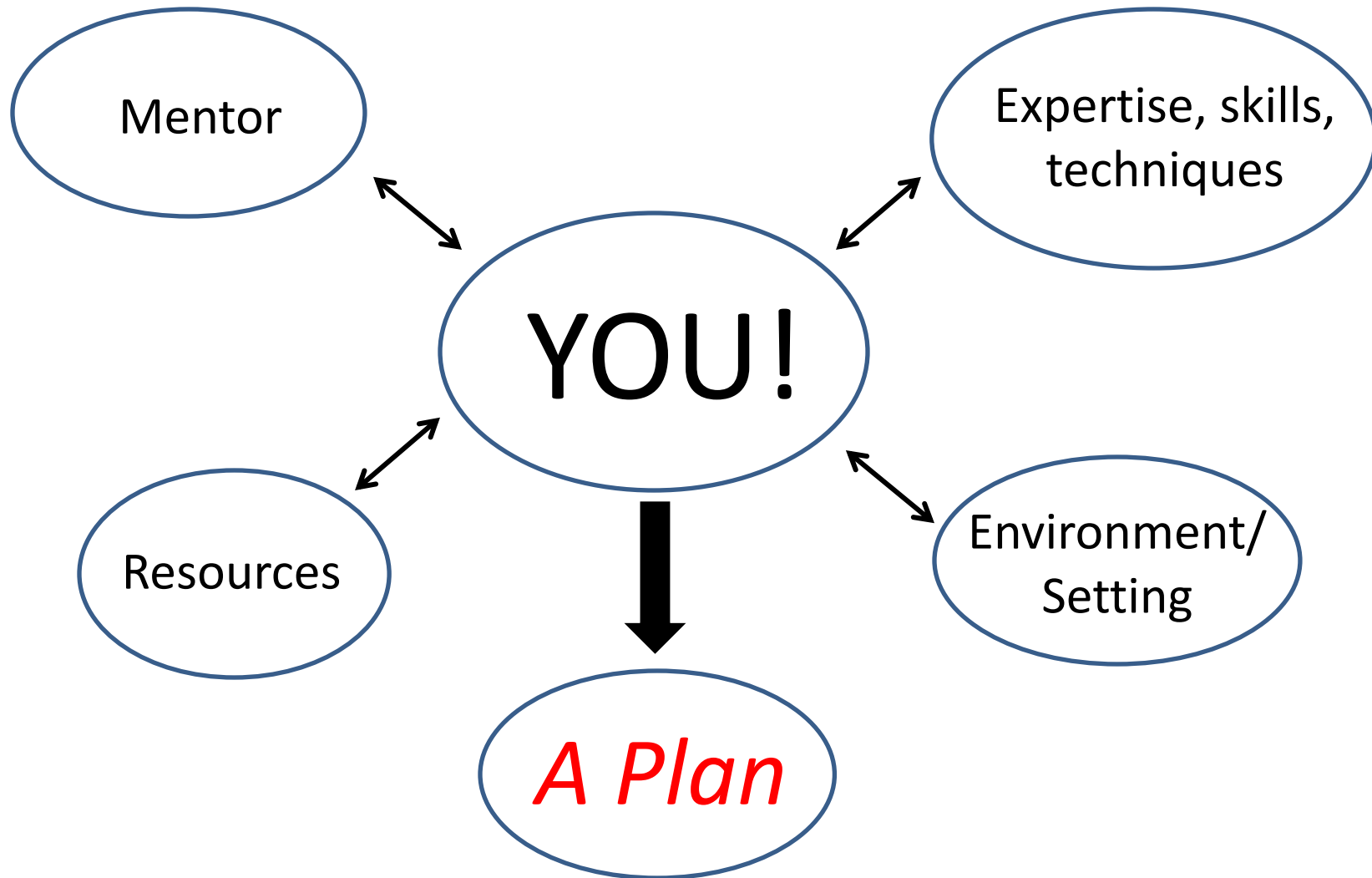
- Bachelors of Science degree in Mechanical Engineering from the University of Kentucky, 1916
 - First female engineering graduate from UK
 - Second woman engineering graduate in the United States
 - First woman to receive a professional degree of Mechanical Engineer
- "Margaret Ingels - College of Engineering | Alumni & Friends". Engr.uky.edu. 1952-09-04.*

Final thoughts



- Not “one-size-fits-all”
- “All I need is one mentor” – FALSE!
- “I can accept anything because this mentor is famous” – FALSE
- “This guy can open doors for me”
≈ Maybe ... FALSE
- Natural transitions:
*Mentee ... Colleague ... Collaborator ...
Competitor?*

The Big Picture



Resources

- National Postdoctoral Association (www.nationalpostdoc.org)
- Science Careers (<http://sciencecareers.sciencemag.org/>)
- Federation of American Societies for Experimental Biology (FASEB)
 - Individual Development Plan (<http://www.faseb.org/portals/0/pdfs/opa/idp.pdf>)
 - myIDP (<http://myidp.sciencecareers.org/>)
- American Society of Civil Engineers (www.asce.org/)
- PhDs.org
 - Postdocs (<http://www.phds.org/postdoc>)
 - Jobs (<http://jobs.phds.org/engineering/postdoc>)
- The Chronicle of Higher Education (<http://chronicle.com/section/Home/5/>)



Thelma Estrin

(February 21, 1924 –)

Electrical Engineer

- Electrical Engineering from University of Wisconsin-Madison
 - BSc in 1948
 - MSc in 1949
 - PhD in 1951

"Thelma Estrin, Professor-in-Residence". UCLA Computer Science Department People.

- One of the first to apply computer technology to healthcare and medical research
- Pioneering work in the fields of expert systems and biomedical engineering
- Achievement Award from the Society of Women Engineers (1981)
- IEEE Haraden Pratt Award (1991)
- Superior Accomplishment Award from the National Science Foundation.