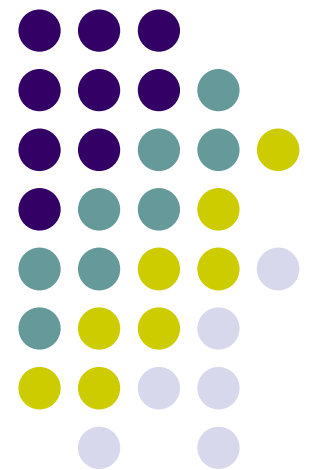


Research as a Career

Jeanne Ferrante, UCSD

Ronitt Rubinfeld, NEC

Victoria Stavridou, SRI



Background: Jeanne Ferrante



- Ph.D. Math., MIT, 1974
- Assistant Professor, Math., Tufts 1974-78
- IBM T. J. Watson Research Center, 1978-94
 - Transition from theory to compilers
 - Projects
 - Experimental Compiler System
 - PTRAN: parallelism
- Professor, CSE, UCSD, 1994-present
 - Memory Hierarchy
 - Runtime and compiler optimizations for performance

Background: Ronitt Rubinfeld



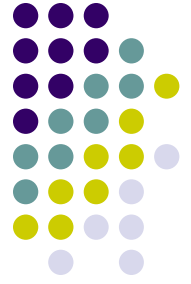
- Ph.D., U.C. Berkeley, 1990
- Postdocs
 - DIMACS (Princeton), 1990-1991
 - Hebrew University, 1991-1992
- Cornell
 - Assistant Professor, 1992-1998
 - Associate Professor, 1998-2000
- Visiting positions:
 - MIT 1995-1996
 - IBM Almaden 1998-1999
- Senior Research Scientist, NEC Research Institute 1999-present

Background: Victoria Stavridou



- Ph.D. CompSci, University of Manchester, UK
- Various university research positions
- Lecturer, CS, Royal Holloway College, University of London, 1988 – 1995
- Reader, CS, Queen Mary College, University of London, 1996 – 1998
- Director, System Design Lab, SRI International, 1998 – present
- Term rewriting, hardware verification, safety critical systems, information security, software engineering

Research Management: Ferrante



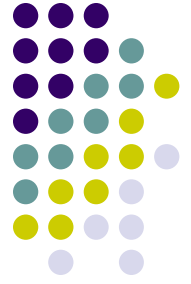
- Usually no explicit training
- Change this! Get your students to
 - Manage an undergraduate research student
 - Write a major part of a grant proposal
 - Organize seminars
 - Manage a small pot of money
 - Make a plan for their future
- Lessons:
 - Good time management, organization
 - Planning important: set priorities, evaluate infrastructures
 - Each student is unique

Research Management: Rubinfeld



- Getting the most out of your graduate students:
 - Only take good ones – how do you get them?
 - How do you come up with a good problem?
 - Try lots of them
 - Learn from other areas/researchers
 - Remember the basics
 - Treat them like colleagues
 - Inspire and encourage

Research Management: Stavridou



- Managing research programs
 - Understand your client
 - Concept definition and positioning
 - Need Approach Benefits Competition
 - Iterate, iterate, iterate
 - Stay the course and deliver
- Managing research groups
 - Choose people wisely
 - Keep them involved in research planning and execution
 - Trust them
- Managing research organizations
 - Research skills and reputation are musts
 - Help your people be as successful as they can be
 - Be honest downwards and upwards
 - Demand excellence



Making Transitions: Ferrante

- Industrial research lab
 - Colleagues, few students, no grants, company concerns
- University
 - More multitasking: teaching, service, advising graduate students, grants
- Lessons:
 - Keep your flexibility
 - Mentoring helps
 - Scale matters



Making Transitions: Rubinfeld

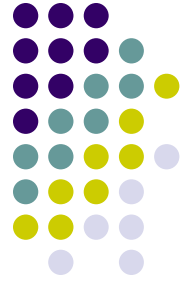
- University → Basic research lab
 - Keep your PhD students
 - Work with summer interns, postdocs, colleagues, visitors
- Basic research lab → Research lab
 - Find problems that you are interested in
 - Spend a lot of time talking to management



Making Transitions: Stavridou

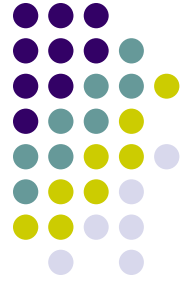
- University → University
 - Do not underestimate the disruption
 - Try and keep your PhD students, lab etc
 - Do not take continuity for granted!
- University → Research Institute
 - More time for research
 - Explore multidisciplinary connections
 - Build large teams
 - Influence your clients

Making a Name for Yourself: Ferrante



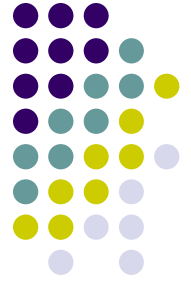
- Make a plan
 - Talks, trips, program committees, conference activities, awards...
- Mentoring helps
- Network, network, network
- The joys of successful students
- Trend towards large-scale collaborations
- Don't be afraid to lead!

Making a Name for Yourself: Rubinfeld



- Talk tours
 - 1 and 3 years before coming up for tenure
 - Make sure it is polished
- Invite colleagues to give talks
- Your students
- Organize a workshop

Making a Name for Yourself: Stavridou



- Don't be a shy violet
- Put yourself forward for community service
- Give seminars
- Attend conferences and workshops
- Continuously expand your network
- Organize meetings, seminars and conferences
- Participate in program committees
- Write in popular journals and offer special editions
- Take the initiative and stand in front of people with your ideas