

ECE Advising: Getting Your Questions Answered

James A. Bain



Outline

- Logistics of the advising and mentoring process
- Objectives of the advising and mentoring process
- Case studies in advising and mentoring

Logistics of Advising Process

- Fall Sophomore Year
 - Take 18-200: Emerging Trends in ECE
 - Receive advisor assignment
 - Complete advising preparation worksheet
 - Meet with advisor (possibly more than once)
 - Select classes for Spring 05
- Spring Sophomore Year
 - Meet with advisor (possibly more than once)
 - Request/select a faculty mentor
 - Meet with faculty mentor
 - Select classes for Fall 06
- Junior and Senior Years
 - Meet with faculty mentor as desired
 - Select classes for each semester
 - Plan for post-graduation:
internships, jobs, fellowships, grad schools, etc.

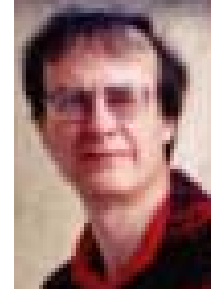
Sophomore faculty advisors



Jim Bain



Shawn Blanton



Dave Greve



Diana Marculescu



Jose Moura



Priya Narasimhan



Dave O'Halloran



Ed Schlesinger



Peter Steenkiste



Tom Sullivan



Elias Towe

Undergraduate Program Staff



Suzie Laurich-McIntyre - jmpeters@ece.cmu.edu

HH 1118, 8-6995

Director of Alumni and Student Relations

Structures relationships with students during and after ECE, student organizations, profession societies, alumni events



Bruce Krogh

**Associate
Department
Head**



Janet Peters- jmpeters@ece.cmu.edu

HH 1110, 8-3666

Assistant for Undergraduate Education

Monitors student academic progress, handles procedural and policy information and information on Co-op, IMB, Double Majors and Minors, Career Center, Health Center, etc.



Carin Hawkins- jmpeters@ece.cmu.edu

HH 1109, 8-2496

Undergraduate Program Assistant

Assists associate department head in class scheduling, waitlists, etc.

Name _____ Advisor _____

Preparing for your first advising appointment

When meeting with your faculty advisor for the first time, it is essential that you be as prepared as possible to make the most of your advising session. The preparation can be divided into three categories: *Think*, *Investigate*, and *Plan*.

Bring these completed sheets to your first appointment!

Think

- What are your areas of interest? _____

- Are you thinking of completing an Additional Major/Minor? Y N If Yes, What? _____
- Are you thinking of doing any internships? Y N If yes, when? _____
- Are you thinking of doing a Co-Op? Y N If Yes, When? _____
- What are your post-graduation goals? IMB MS elsewhere PhD Industry Other _____
- What time constraints are you facing (work, extra-curricular activities, family, friends, etc.)

Investigate

- Look at the requirements and options for the ECE degree at <http://www.ece.cmu.edu/users/shared/primer/index.php>
- Find out what the requirements are for any Additional Major(s)/Minor(s)

Plan

- List all requirements for ECE and any Additional Major(s)/Minor(s)
- Fill out plan for remaining semesters
- See if plan is reasonable, given constraints you face
- Modify plan as necessary (go back to *Think* stage if needed)

Academic Plan

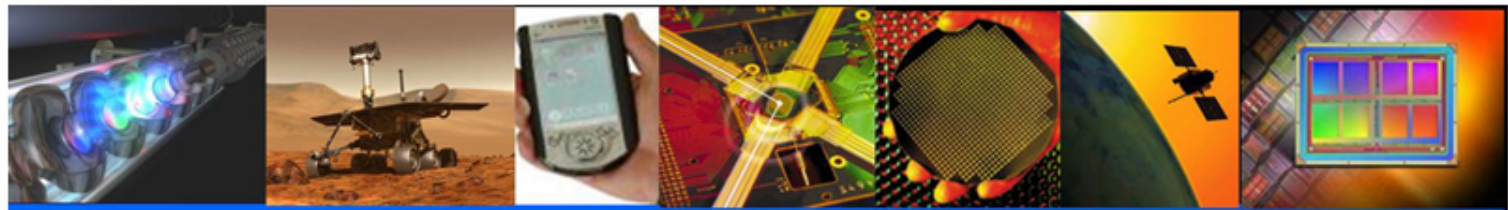
Name: _____ Date: _____ Advisor: _____

1 st Year Fall	1 st Year Spring	Sophomore Fall	Sophomore Spring	Junior Fall	Junior Spring	Senior Fall	Senior Spring	5 th Year Fall	5 th Year Spring
Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:	Units Carried:
QPA:	QPA:	QPA:	QPA:	QPA:	QPA:	QPA:	QPA:	QPA:	QPA:
Summer Plans:									
Summer Plans (cont.)									

Updated 09/04, JP & SLM

- Announcements
- Course Information
- Staff Information
- Course Documents
- Assignments
- Communication
- External Links
- Tools
- Course Map
- Control Panel

COURSES > F04-EMERGING TRENDS IN ELECTRICAL AND COMPUTER... > ANNOUNCEMENTS



18-200 Fall 2004

The Emerging Trends in Electrical and Computer Engineering

Hosted by Jimmy Zhu, ABB Professor of Engineering

VIEW TODAY VIEW LAST 7 DAYS VIEW LAST 30 DAYS VIEW ALL

September 1 - 8, 2004

Fri, Aug 27, 2004 -- Lecture slides and quiz posted Posted by Jian-Gang Zhu

Lecture slides and quiz posted in Course Document folder.

[Course Documents](#)

Myths about meeting with your advisor

- Myth I: Advisors are judging you, so don't say anything stupid...
...even if that means that you say nothing
- Myth II: Advisors have all the answers
- Myth III: Advisors are looking to criticize your performance...
... so avoid them if things aren't going well
- Myth IV: Advisors are looking to criticize your performance...
... so you don't need to see them if things are going well

Objectives of Advising Process

*Treat students such that they would
ENTHUSIASTICALLY advise their
loved ones to enroll in ECE at CMU*

Top 10 Reasons for Intensive Advising

1. Our students sometimes need some questions answered
2. Our students sometimes need some reassurance
3. Our students want to feel heard and connected
4. Our students may not know all the questions they have
5. Our students are not aware of all of their opportunities
6. Our students don't know all of the faculty members
7. Our students benefit from thinking and planning ahead
8. Our students have varying ways in which they want to receive information
9. Our students are human beings who need preparation for life
10. We want to know our students

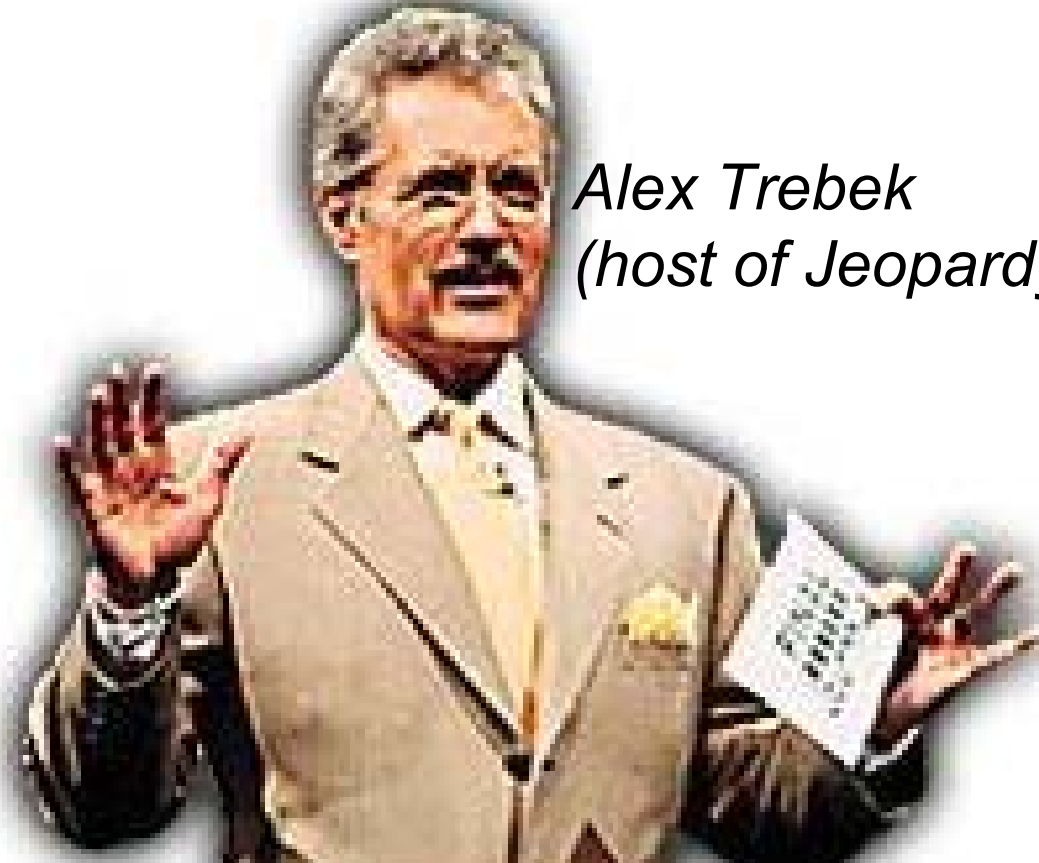
Why look to your advisor for answers ...

why not ... ?

Ask Jeeves®
Ask.com



or



*Alex Trebek
(host of Jeopardy)*

or



*Donald
Trump*



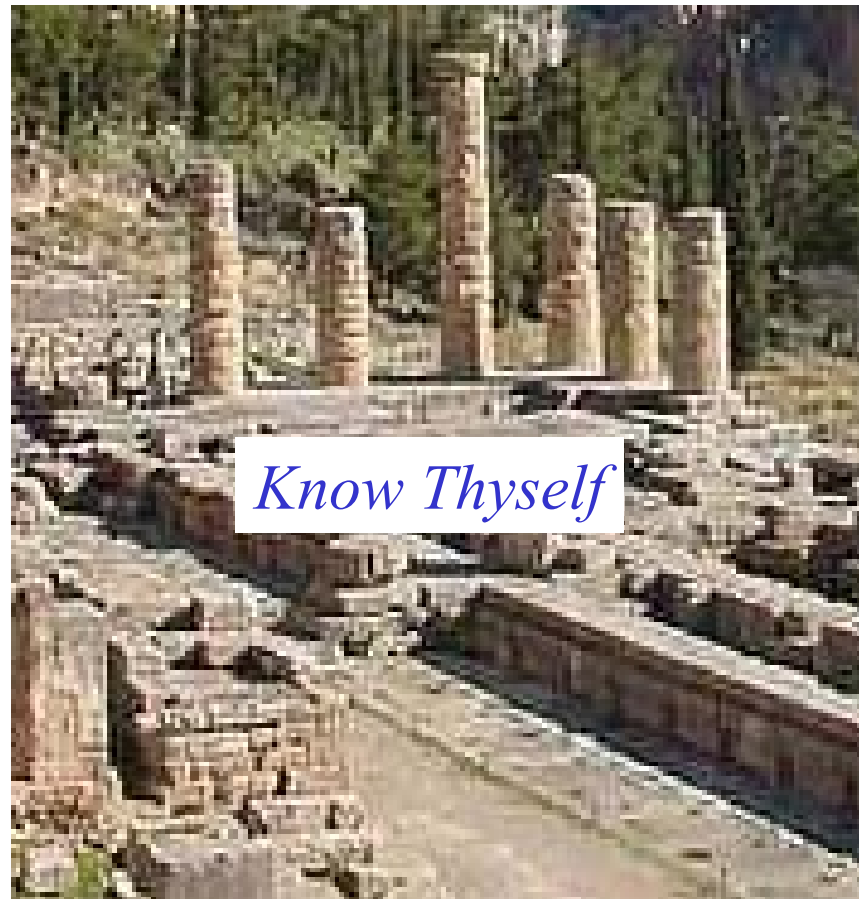
Galadriel



Gandalf

Actually, advisors give **ADVICE** not answers...

The Oracle at Delphi



Think of advising as a resource

Think, Investigate, Plan

- Initiate contact
- Be patient but persistent with your advisor
- Come prepared with questions

Case studies in advising & mentoring



Advisee as sophomore
Interested in CE
Moved on to mentor

Megan Hyland
ECE Junior



Not my advisee as sophomore
Currently my mentee
Some detailed discussions
about double major

Warun Bubna
ECE Junior



Advisee as sophomore
Interested in signal
processing
Introduced to Kumar
Moved on to mentor

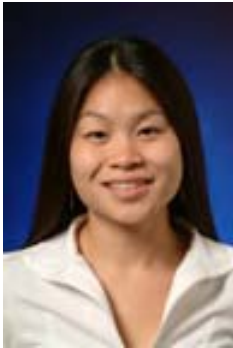
Wantanee Viriyasitavat
ECE Junior



Not my advisee as sophomore
Currently my mentee
A few conversations so far

Sirisha Pillalamarri
ECE Junior

Case studies in advising & mentoring



Olivia Tsai
ECE Senior

Summer project
Recommendation letters
Career and grad school advice



Jim Salvia
ECE Senior

Academic year projects
Recommendation letters
Career and grad school advice

The ultimate mentoring relationship



Using High Permeability Material to Improve On-Chip Inductors

Jim Salvia

Junior - Electrical and Computer Engineering

Dr. James Bain

Electrical and Computer Engineering

Dr. C. Patrick Yue

Electrical and Computer Engineering

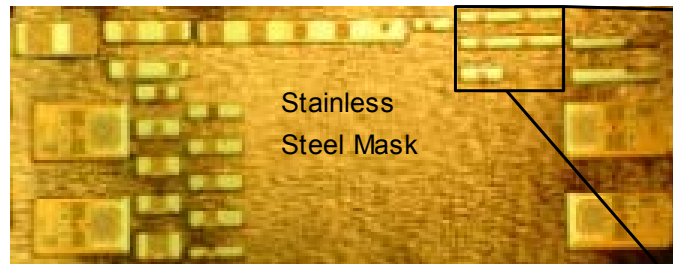
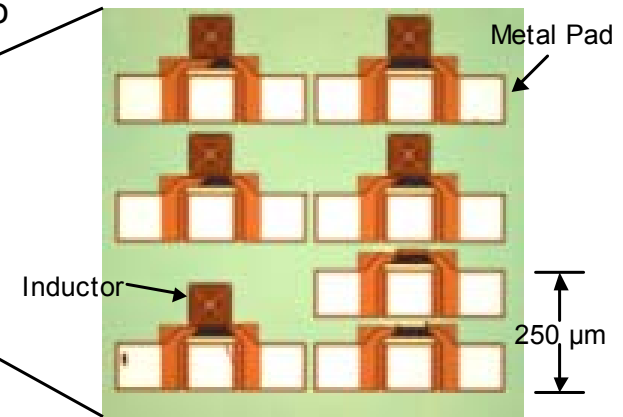
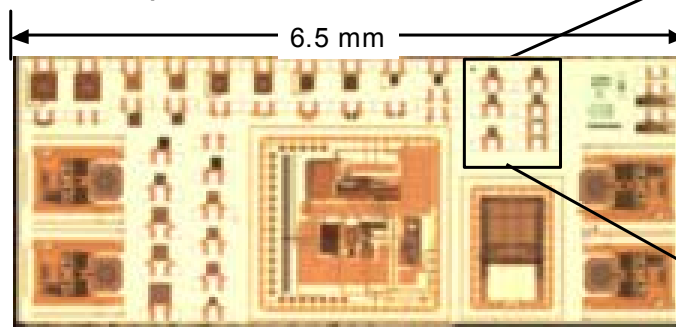


Undergraduate research project (cont'd)

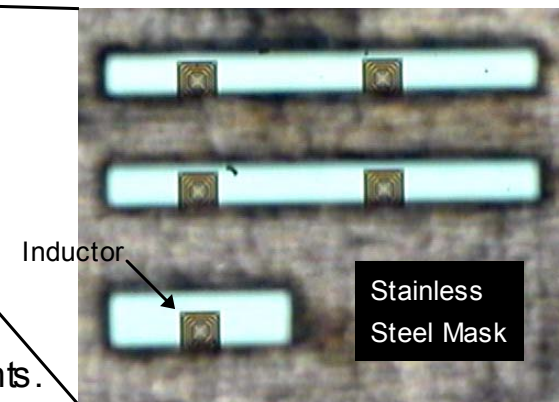


Shadowmasking for Precise Deposition

A thin film of $\text{Ni}_{80}\text{Fe}_{20}$ will be deposited onto the sample inductors.



Stainless
Steel Mask

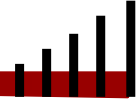


A shadowmask ensures that the sputtering process will affect only the desired components.

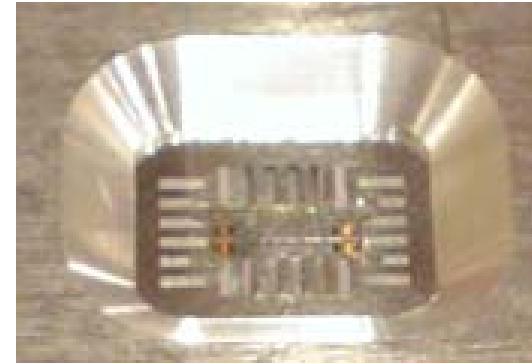
Undergraduate research project (cont'd)



Encasing the Chip and Mask

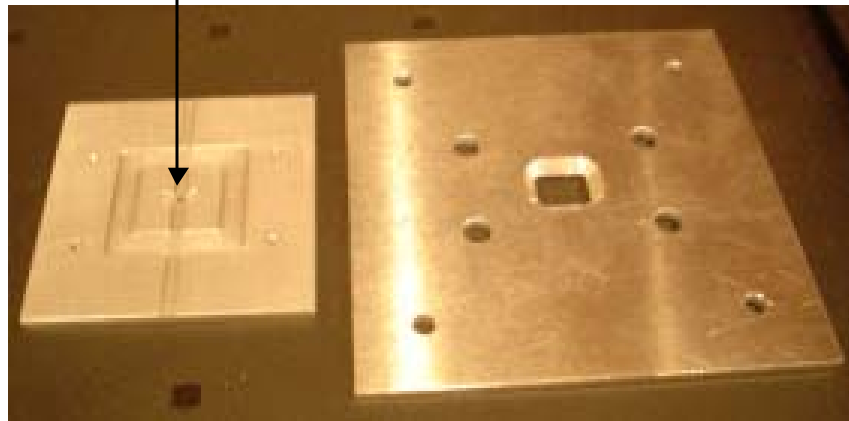


The chip and mask will be held in place using an aluminum frame that has been designed to mount inside a thin film deposition system.



Stainless steel mask covering a sample chip, held in place by an aluminum frame

This recess holds the chip snugly.



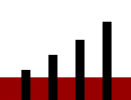
The frame also fits into a standard mask aligner, guaranteeing a precise and repeatable alignment.



Undergraduate research project (cont'd)

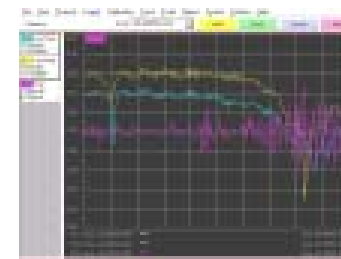
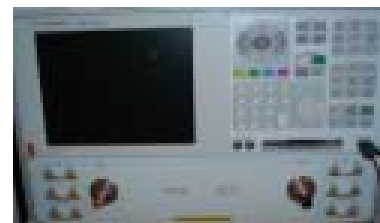


The RF Measurement Equipment



Agilent Technologies Microwave Vector Network Analyzer

- Functional range of 45 MHz to 50 GHz
- Measures S-parameters to characterize arbitrary one-port or two-port networks



Cascade Microtech RF Probe Station

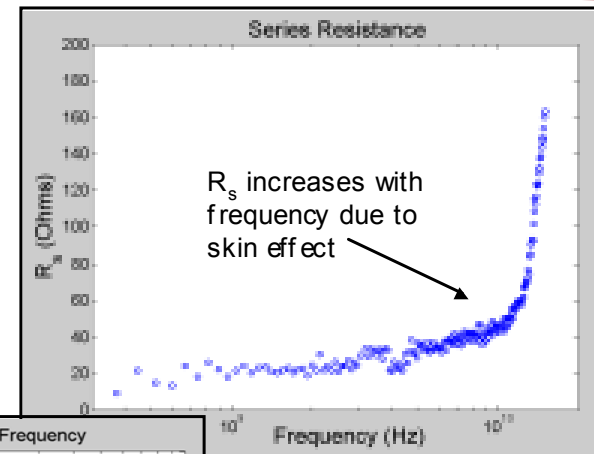
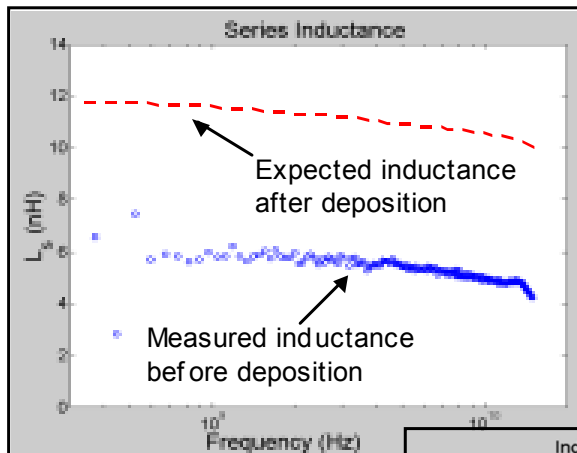
- Allows for precise alignment of RF probes with 100 μm pads
- Vacuum chuck holds samples rigidly for repeatable measurements



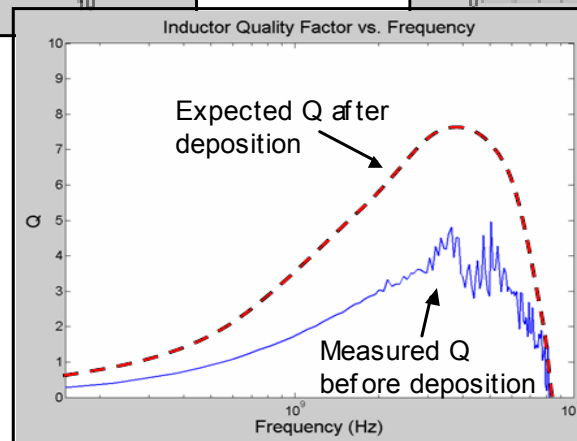
Undergraduate research project (cont'd)



Interpreting the Inductor Measurements



The addition of magnetic material is expected to double the device's inductance and Q.



Parasitic capacitances and resistances should not be significantly affected by the permalloy.

Summary

- The ECE advising system is designed to provide you with resources
- Advisors are assigned and will help connect you with mentors
- Mentors will be in one area of your interest and will guide you as juniors and seniors
- The more we know about you and the more you know about the department, the more effectively we can help you find answers
- Ultimately, YOU are going to provide your own answers NOT get them from someone else