Electrical & Computer Engineering 4+1
Bachelor's to Master's Pathway

Dr. Nobby Kobayashi
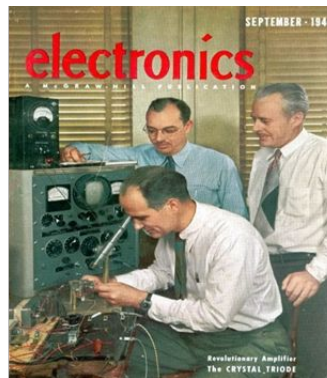ECE Graduate Director
nkobayas@ucsc.edu

Shelby Wilson
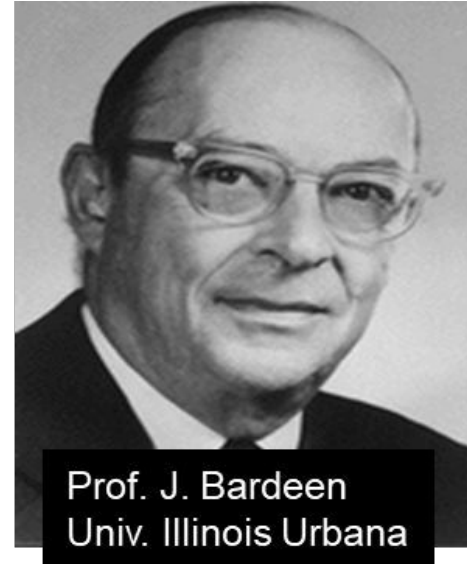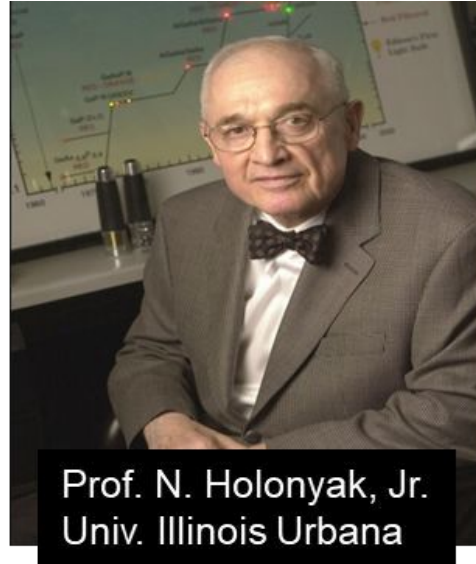ECE Graduate Student
Advisor
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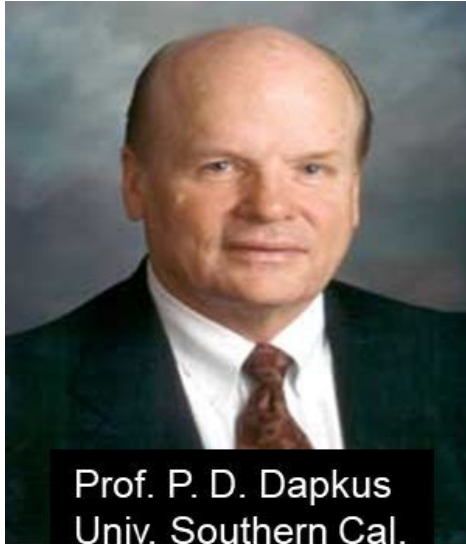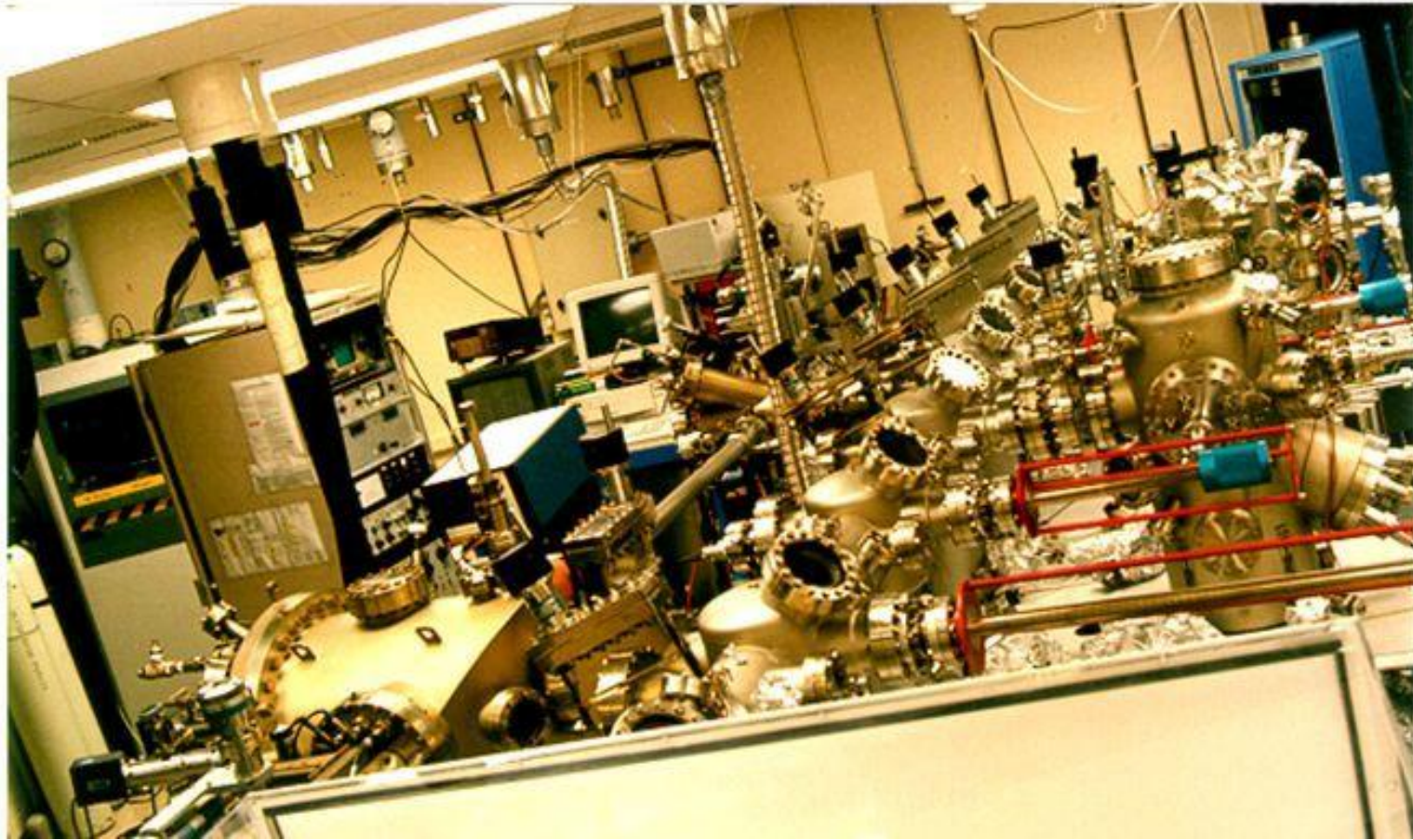
Why Not Going to Graduate School? Become a Leader & Define Your Work

Why Not Going to Graduate School?
Build Your Academic Family Tree

Prof. P. D. Dapkus
Univ. Southern Cal.

Prof. N. Holonyak, Jr.
Univ. Illinois Urbana

Prof. J. Bardeen
Univ. Illinois Urbana

Why Not Going to Graduate School?
Play with $M Toys

Why Not Going to Graduate School?
Go Places You Would Never Go

Goettingen October 2006

Dear Dr. Kobayashi,
it is a great pleasure to kindly ask you to participate at the **international workshop**

LASERION® 2007

"Microfabrication, nanostructured materials and biotechnology"

July 1-6, 2007

Schloss Ringberg/Tegernsee

located south of Munich (D) on a mountain overlooking the lake of Tegernsee,
and present an **INVITED** Talk on a topic of your choice related to your expertise

"nanoscale materials and applications"

Why Not Going to Graduate School?
## Make More $ (All figures in USD. Figures from 2016-2017 PayScale College Salary Report.)

Major	Degree Type	Early Career Pay	Mid-Career Pay
Aerospace Engineering	Master's	76,300	118,000
	Bachelor's	65,400	106,000
Biomedical Engineering	Master's	70,500	122,000
	Bachelor's	65,400	106,000
Chemical Engineering	Master's	73,100	125,000
	Bachelor's	69,800	119,000
Civil Engineering	Master's	60,900	103,000
	Bachelor's	57,200	96,300
Computer Engineering	Master's	86,700	125,000
	Bachelor's	69,600	113,000
Electrical Engineering	Master's	79,900	127,000
	Bachelor's	67,000	110,000

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Agenda

- Introduction to the ECE Pathway Program

- ECE BS/MS Pathway Eligibility

- ECE MS Degree Requirements

- What to Consider Before Applying

- How to Apply

- Application Timeline & Requirements

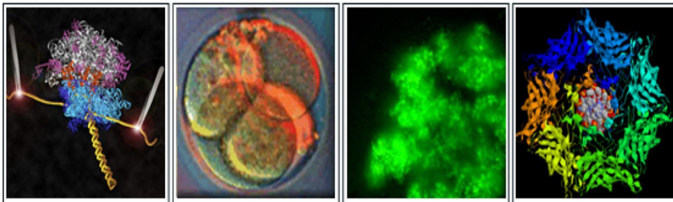- Questions?

Who We
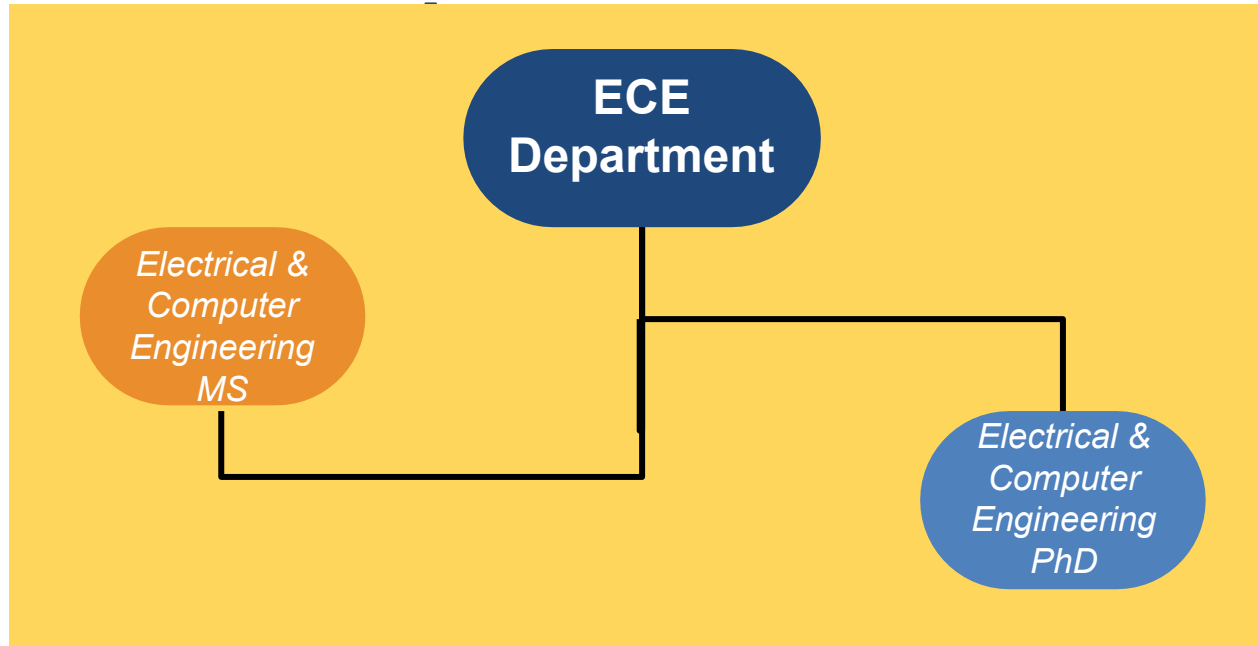
ECE Department

Electrical & Computer Engineering MS

Electrical & Computer Engineering PhD

A complete list of research areas in the ECE Department is available [here](#).

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The Electrical & Computer Engineering Pathway

ECE Pathway…

- is a 4+1 program that enables UCSC undergraduate students to earn bachelor's **AND** master's degrees in as little as **5 years with appropriate planning**

- count qualified UCSC credits taken as an undergrad toward a master's degree (up to 15 credits maximum)

- provide students with opportunities to advance prior research or explore a new research area

- help students gain a competitive edge as industry leaders and researchers

- enable students to apply experience gained as a UCSC undergrad toward advancing career plans without "having to go back" later for a master's or PhD.

- simplified application process
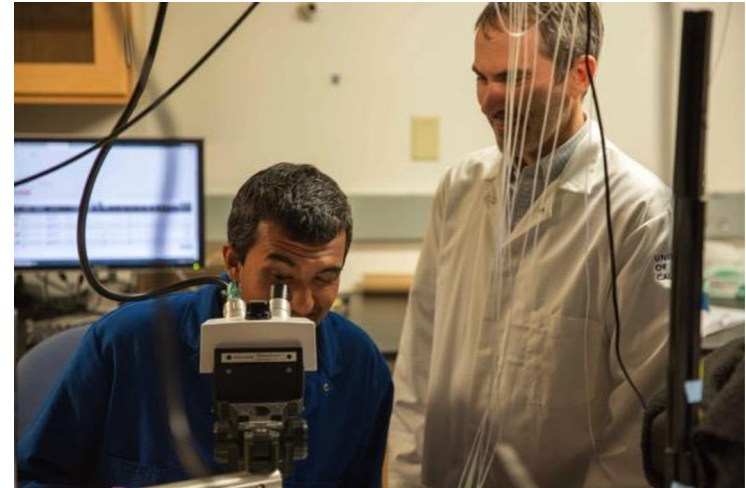
ECE BS/MS Pathway: Eligibility

1 A UCSC student enrolled in a bachelor's program when formally applying with plans to enroll in the MS program the fall quarter immediately after completing undergrad requirements.

2 For the core area the student is applying to, must pass 2 undergrad courses from the list with a grade of B+ or higher before starting the M.S.

3 Must maintain a **3.0 GPA or higher** until the completion of undergraduate requirements.

4 Must complete **BOTH** the ECE BS/MS Pathway eligibility survey **AND** the formal ECE MS application.

ECE Contiguous Pathway: Depth Areas

Photonics & Electronic Devices

Robotics, Control, & Cyber-Physical Systems

ECE Master's

Electronic Circuits & Energy Systems

Signals, Image Processing, & Communications
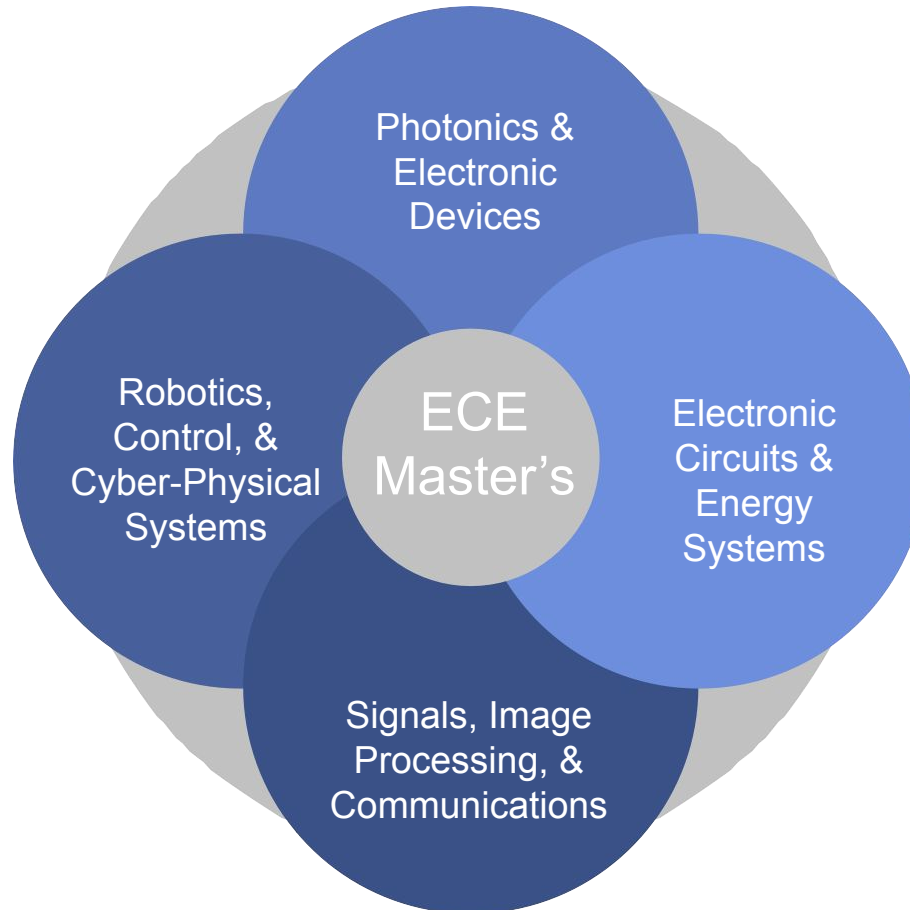
Learn more about depth areas here.

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ECE Depth Areas:
Course Requirements for 4+1

Pass 2 courses in your chosen depth area with B+ or higher

- **Photonics & Electronic Devices**
  - ECE 102, ECE 130, ECE 135

- **Electronic Circuits and Energy Systems**
  - ECE 157, ECE 171, ECE 172, ECE 173, ECE 177 (Circuits)
  - or
  - ECE 171, ECE 175, ECE 176, ECE 177 (Energy Systems)

- **Robotics, Controls, and Cyber-Physical Systems**
  - ECE 141 or ECE 241 (required), ECE 118, ECE 121, ECE 167

- **Signals, Image Processing, and Communications**
  - ECE 151, ECE 153

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ECE BS/MS Pathway:
Degree Requirements

ECE MS Degree Requirements (45 units)

- Complete 15 Units (3 classes) in One of Four Depth Areas
  - Photonics and Electronic Devices
  - Signals, Image Processing, and Communications
  - Electronic Circuits and Energy Systems
  - Robotics, Control, and Cyber-Physical Systems

- Seminar Requirement (5 units)
  - All students must complete 5 units of seminar coursework (ECE 290/291)

- Electives (25 units)
  - All other courses must be 5-unit grad-level BE courses
  - At least 25 of the 45 required units must be in Electrical & Computer Engineering

*Degree requirements are subject to change pending from the Graduate Council. Please contact the ECE Graduate Student Advisor and refer to the UCSC General Catalog for any updates.

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MS Degree Tracks

Students must confirm their degree track no later than the end of their first year (3 quarters) in the program. Changes to the degree track are not permitted after this deadline.

Exam Track

Default track for students entering the MS program. Fastest to complete

Must pass 3 comprehensive exams in your chosen depth area

Comprehensive exams are offered at the end of the quarter for ECE grad classes

Students register to take the exams in advance

Project Track

Hybrid (coursework & research focus)

Can count a maximum of 5 independent study credits toward the 45 required for MS degree.

Student must self-identify faculty advisor to supervise project

Thesis Track

For students interested in academia or continuing on to a PhD program. Most exposure to research

Can count a maximum of 10 credits of independent study credits toward the 45 required credits for MS degree

Student must self-identify faculty advisor to supervise thesis

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Questions?

How to Apply for the ECE Pathway

Step One:

- Complete the [ECE Contiguous Pathway Survey](#)

- If you are eligible, you will be added to the contiguous pathway internal tracking database.

- You can complete this step at any time prior to the formal application deadline.

Step Two:

- During your final year, complete the [formal application](#) for the ECE MS

- **Note:** Eligibility for the pathway program does not guarantee admission.

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Application Requirements

- 1 Letter of Recommendation

- Statement of Purpose - typically a description of your short-term and long-term goals or career plan, and how a master's degree at UCSC would help you reach these goals.

- Resume / CV

- Unofficial Transcripts

- Minimum 3.0 GPA

- See the BE Graduate Admissions FAQ for more detailed information: **gradadmissions.ucsc.edu/**

Application Timeline

- Fall 2025 applications open on October 1st, 2024.

- The application deadline for the ECE MS program is February 6, 2025.

- Two out of three letters of recommendation and personal history statement waived for 4+1 candidates this application period.

- The formal application is online at: **applygrad.ucsc.edu/apply/**

Tips for Applying

- Complete the [Pathway eligibility survey](#) at any time *before* **the formal application deadline.** Please notify the ECE graduate advisor every academic year if you want us to continue tracking your eligibility.

- Apply formally to the ECE MS program the Fall quarter *before* you plan to graduate from a bachelor's program. **Cannot take a year off between programs.**

- Get a head start on the 1 required letter of recommendation and prioritize letters from ECE faculty.

- Engage in undergraduate research and build rapport with ECE faculty.

- Utilize campus resources like the [Career Center](#) and [writing support services](#) to polish your Resume and Statement of Purpose.

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QUESTIONS?

More Information at BSOE Graduate Advising

https://grad.soe.ucsc.edu/ece