

Business Rules

CMU Department Templates

Seven Heads Design
Last updated: 1/13/17

Introduction

This document provides recommendations for template functionality in the context of the CMS.

Each template is displayed on the left, while specific elements are identified on the right. Each element in a template is annotated with guidelines for display, use, and implementation.

Contents

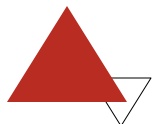
Global elements

- Colors
- Headers
- Navigation

Templates

- Homepage A
- Homepage B
- News Landing
- Faculty Bio
- Course Listing
- Article
- Programs
- Research Group
- About
- People Landing
- Topic Landing

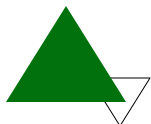
Colors



CMU Red

#a81a1a

7.42:1



Camarone

#00610d

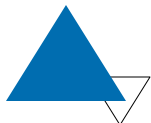
7.73:1



Orange Peel

#fc9a00

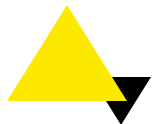
8.08:1



Endeavor

#0059a0

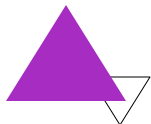
7.15:1



Lemon

#fce80a

13.8:1



Purple

#9400b4

7.19:1

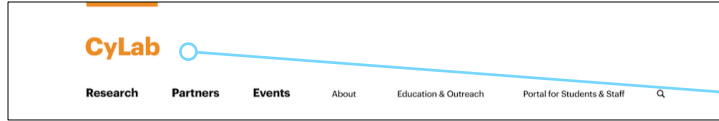
How to select a color

All templates use a single accent color.
The default color is CMU Red.

If a department or center has a brand color, that color should be used.

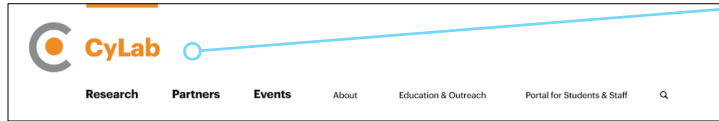
If a department or center does not have a brand color, and does not want to use CMU Red, they may choose from Orange Peel, Lemon, Camarone, Endeavor, or Purple.

Headers

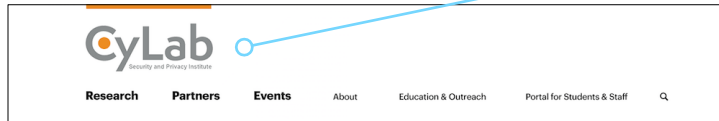


How to select a default header

If the department or center doesn't have a logo or a wordmark, use Header 1 (default).

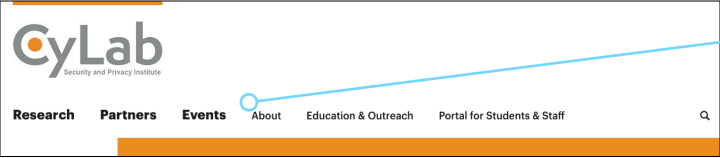


If the department or center has a logo, but no wordmark, use Header 2.



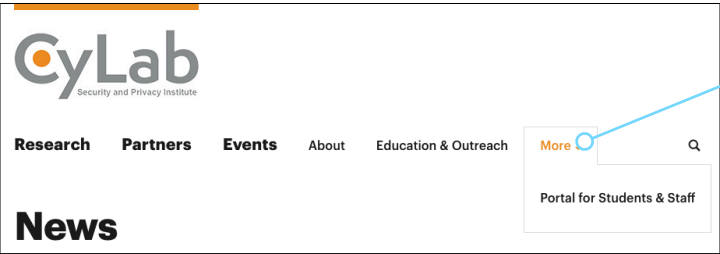
If the department or center has a logo with a wordmark, use Header 3.

Navigation



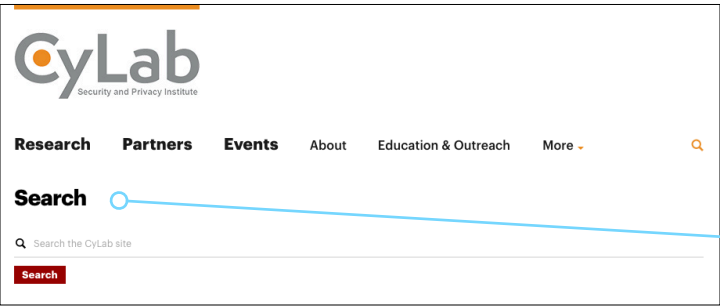
Main navigation styles

Departments can set any number of menu items in style one (primary navigation) and any number of menu items in style two (secondary navigation). See CSS for actual styles.



Main navigation constraints

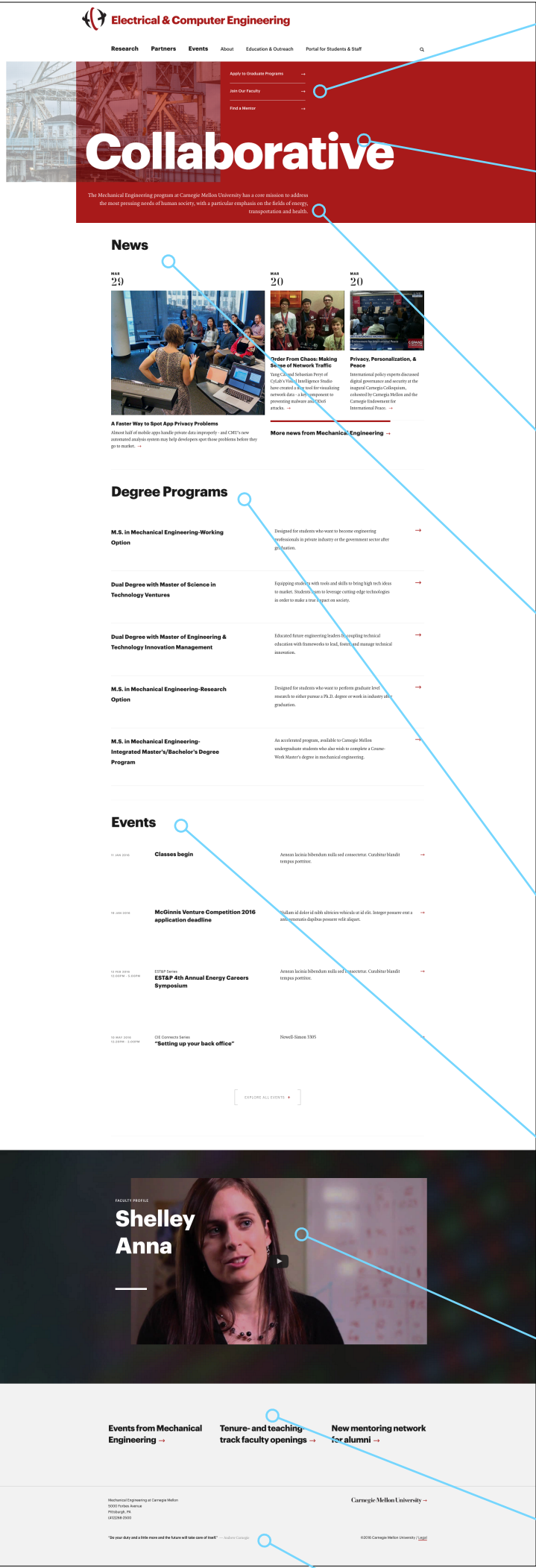
The main navigation can accommodate up to 80 characters of menu items. When main navigation menu items total more than 80 characters, the final visible menu item (before reaching the 80-character limit) will read “More,” and display a down-pointing arrow. Selecting this item reveals a dropdown menu with the remaining menu items. These items, as well as “More,” should always be rendered in style two.



Search

Selecting the search icon reveals a dropdown search bar. The search bar’s initial text should read “Search the [name of website] site.”

Homepage A



Featured subpages

A selection of up to three subpages, which are set to “featured,” with a unique text string and a URL.

Thematic hero area

Departments may choose a single word to display in the hero area. This word should be selected in conversation between the department and the College, expressing the spirit and goals of the department in a way that aligns with the College and University brand.

Introduction

Up to 280 characters of copy. Should provide an introduction or summary of the department or institute.

News

Three most recent articles with photos published by the department. The department may choose to share articles published by the College which have been tagged as relevant to the department. Articles without photos should be excluded from this display.

Programs or focus area listing

Displays a list of program offerings or focus areas. Each program has a title and a sentence of description, linking to their program pages.

Related events

Shows up to four upcoming events. “Explore all events” button links to the events landing page.

Featured video

Featured YouTube video sits behind HTML content, but moves up upon play. Video home screen must be dark.

Calls-to-action

Displays three calls-to-action, as displayed. Links to appropriate subpages. Customizable per page.

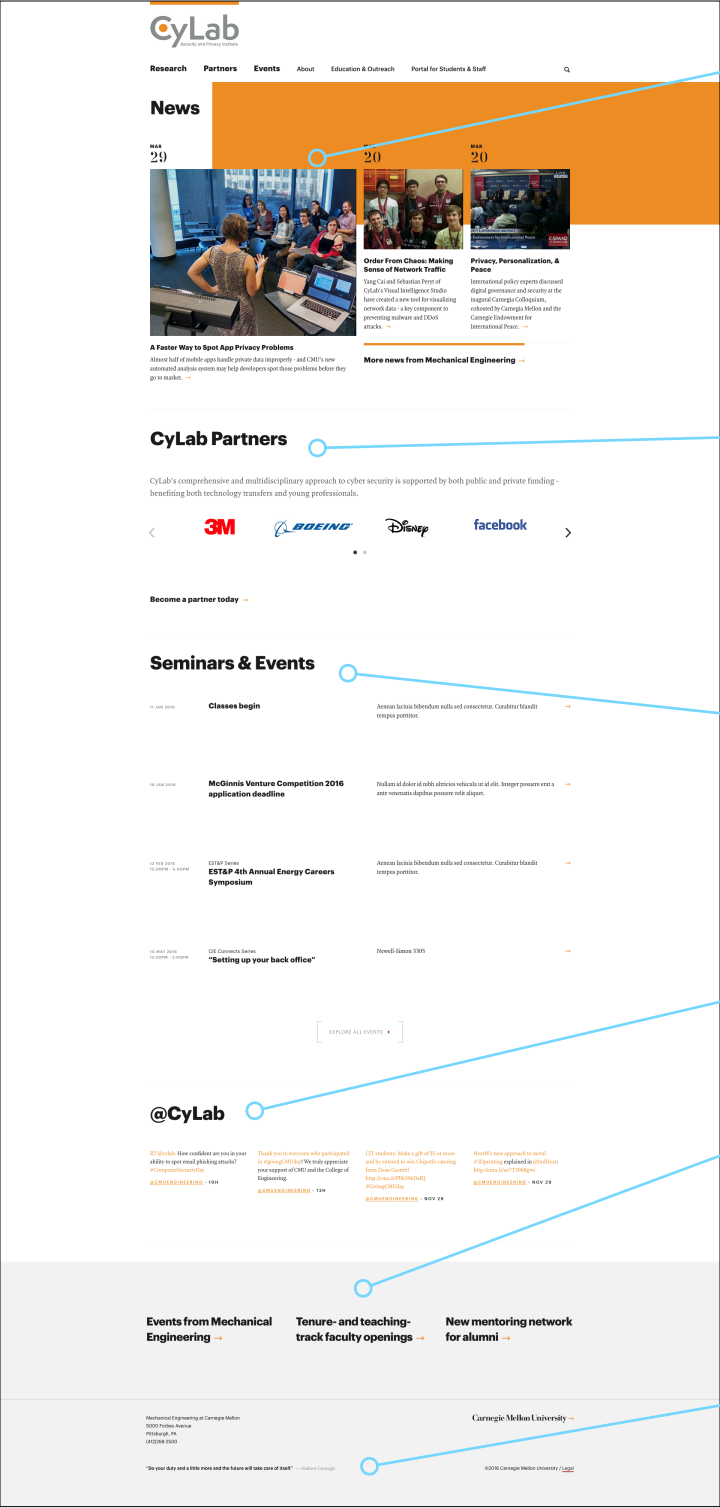
Footer

Displays one of fifteen randomized quotes on each load. This applies to all department templates.

CMS data elements

- Introduction
- Articles
- Programs or focus areas (tags)
- Featured video
- Calls-to-action
- Footer quotations

Homepage B



News hero

Three most recent articles with photos published by the department. The department may choose to share articles published by the College which have been tagged as relevant to the department. Articles without photos should be excluded from this display.

Partnerships

Partnership introductory text is editable. All partnerships are represented by the corporate logo of the partner. Logos are not links.

Related events

Shows up to four upcoming events. “Explore all events” button links to the events landing page.

Twitter feed

Displays four most recent tweets.

Calls-to-action

Displays three calls-to-action, as displayed. Links to appropriate subpages. Customizable per page.

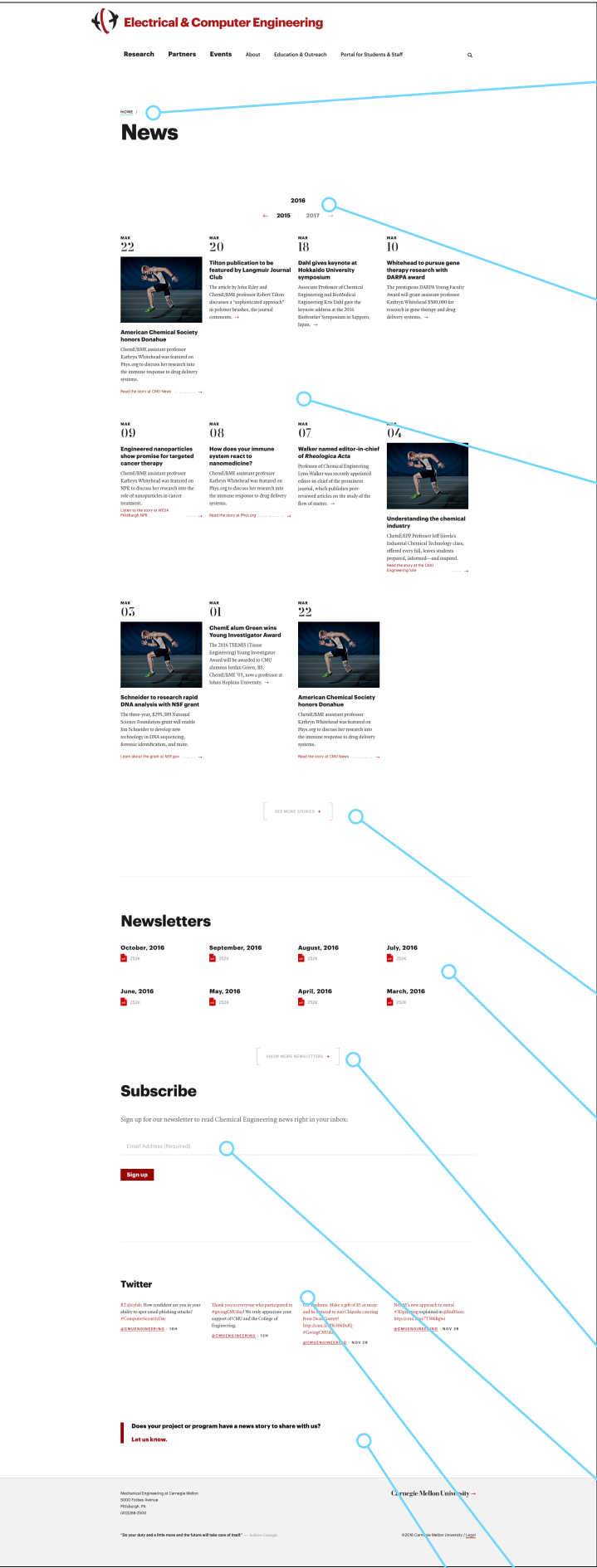
Footer

Displays one of fifteen randomized quotes on each load. This applies to all department templates.

CMS data elements

- Articles
- Partnerships
- Events
- Twitter data
- Calls-to-action
- Footer quotations

News Landing



Breadcrumbs

Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

Year navigation

Displays the twelve most recent articles published in the year selected.

News

Twelve most recent articles published by the department. The department may also choose to share relevant articles published by the College. Render rules (which style of module) are based on thumbnail image size/ratio and availability of image, choosing from Blocks A1, A3, A4, and A5. Articles housed on external sources will display a call-to-action linking the source, while articles displayed on the department website will use an arrow to link to the article page. If more than 20 articles are in the system, a “See more stories” button should be displayed. Selecting the button will load more article modules, eight (or fewer) at a time.

PDF listing

Optional for departments that publish regular PDF newsletters. PDFs are listed in reverse chronological order. If more than eight newsletter files are in the system, a “See more newsletters” button should be displayed. Selecting the button will load more PDFs, eight (or fewer) at a time.

Subscribe call-to-action

Simple form for email intake. Clicking “Sign up” takes users to a confirmation page.

Twitter feed

Displays four most recent tweets.

Story idea call-to-action

Links to form subpage for story idea intake.

CMS data elements

- Breadcrumbs
- Articles
- PDFs
- Subscribe CTA
- Twitter data
- Story CTA
- Footer quotations

Electrical & Computer Engineering

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[About](#)
[Education & Outreach](#)
[Portal for Students & Staff](#)

HOME / PEOPLE / FACULTY /

Gabriela Hug-Glanzmann

Assistant Professor, Electrical and Computer Engineering, Engineering and Public Policy

Dr. Hug is the Co-Director of the Electric Energy Systems Group (EESG) at Carnegie Mellon University, the leader of the thrust area on Transmission & Distribution Management in the SRC Smart Grid Research Center and a member of the Carnegie Mellon Electricity Industry Center (CEIC).

RESEARCH AREAS
Inflectional domain transmission
Water resources
Risk analysis and risk communication
Resiliency

KEYWORDS
Environmental and human health implications of renewable renewables
Risk management for the environmental and human health impacts of unconventional natural gas development

WEBSITE
Personal website
Duke Lab
Complex Fluids Engineering
Process Systems Engineering

OFFICE
Porter Hall 826
PHONE
412-268-2295
FAX
412-268-7139
EMAIL
ghug@cmu.edu
ASSISTANT
Dolly Phelps
GOOGLE SCHOLAR
Gabriela Hug - Glanzmann
CURRICULUM VITAE
Download CV

FEATURED VIDEO

Optimizing energy systems

Dr. Hug's research focuses on control and optimized operation of the electric power systems to enable a renewable energy future. She develops control schemes based on predictive control to overcome the variability and intermittency of renewable energy generation, investigates the usage of power flow control devices to increase the transfer capacity of the existing transmission system and explores how to optimally integrate and use storage devices in the power system.

Education

- Ph.D. in Electric and Computer Engineering, ETH Zurich, Switzerland
- Diploma in Higher Education Teaching, ETH Zurich, Switzerland
- M.Sc. in Electric and Computer Engineering, ETH Zurich, Switzerland

Affiliations

- Center for the Mechanisms and Engineering of Cellular Systems
- CMU Pits Molecular Biophysics and Structural Biology
- Lane Center for Computational Biology
- CMU Pits Computational Biology

Media mentions

Scans reveal lost gravestone test

Scientists at Carnegie Mellon University are making high resolution CT scans of tombstones to reveal the secret patterns in the stone. A computer search has the pattern to a database of signature carvings which reveal the words.

CMU's scanner unlocks secrets from the past

A 10-year-old technology of radiance is a fast center made by researchers here we protect our ability and health. For now, though, Carnegie Mellon University professor Yang Cai, using his digital-scanning technology to help reveal about ancient burial practices that revealing old tombs at CMU's Lake's Episcopal Church.

Carnegie Mellon's Yang Cai uses new scanning system to plot digital graveyard

Indiana Jones, step aside. Carnegie Mellon University's Yang Cai is developing new technology that could revolutionize the way archaeologists work.

Tech to thwart food poisoning, bioterror

Researchers from Carnegie Mellon University are working with various government agencies to develop a "SentinelScan" data mining system for finding and tracking new super-tight bacterial strains. The system can catch all manner of, but also cause more people to get sickening eating contaminated foods.

SEE MORE MENTIONS →

Events from Mechanical Engineering →

Tenure- and teaching-track faculty openings →

New mentoring network for alumni →

Mechanical Engineering at Carnegie Mellon
5000 Forbes Avenue
Pittsburgh, PA
15260-1503

Carnegie Mellon University →

"On your day and a little more and the future will take care of itself." — Andrew Carnegie

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Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

Page content includes the following elements:

- ## Media mentions

Pulls in media mentions collected by the College tagged with the faculty member's or research group's name. Includes media source, article title, article summary, and link to source article. If more than four tagged media mentions are in the system, a "See more mentions" button should be displayed. Selecting the button will load more mentions, four (or fewer) at a time.

- Breadcrumbs
- Page content
- YouTube video
- Research area tags
- Media mentions
- Calls-to-action
- Footer quotations



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HOME / PROGRAMS & ADMISSIONS /

Course Listing

This is a list of current, upcoming, and past ECE courses.

While we try to update this list regularly, we cannot guarantee its accuracy. Before making any enrollment decisions, please talk to your advisor, check the most recent course rollout document (PDF), and refer to the CMU Schedule of Classes.

Follow the course number link for course descriptions, pre- and co-requirements, and additional enrollment details.

Undergraduate Courses

Optional descriptive text allowed here.

Course ▾	Course Name ▾	Location ▾	Units ▾	Semester Offered ▾
18-090	Study Abroad	Pittsburgh	Variable	Past
18-090	Trained Signals: Multimedia Processing for the Arts	Pittsburgh	10	Current
18-100	Introduction to Electrical and Computer Engineering	Pittsburgh	12	Current
18-200	ECE Sophomore Seminar	Pittsburgh	1	Current
18-202	Mathematical Foundations of Electrical Engineering	Pittsburgh	12	Current
18-213	Introduction to Computer Systems	Pittsburgh	12	Current
18-220	Electronic Devices and Analog Circuits	Pittsburgh	12	Current
18-221	Sophomore Projects	Pittsburgh	Variable	Current
18-252	Sophomore Projects	Pittsburgh	Variable	Past
18-240	Structure and Design of Digital Systems	Pittsburgh	12	Current
18-290	Signals and Systems	Pittsburgh	12	Current
18-300	Fundamentals of Electromagnetics	Pittsburgh	12	Current
18-310	Fundamentals of Semiconductor Devices	Pittsburgh	12	Past
18-320	Microelectronic Circuits	Pittsburgh	12	Past
18-331	Junior Projects	Pittsburgh	Variable	Current
18-332	Junior Projects	Pittsburgh	Variable	Past
18-340	Digital Computation	Pittsburgh	12	Past
18-341	Logic Design and Verification	Pittsburgh	12	Current
18-345	Introduction to Telecommunication Networks	Pittsburgh	12	Past
18-349	Introduction to Embedded Systems	Pittsburgh	12	Current & Future
18-370	Fundamentals of Control	Pittsburgh	12	Current
18-372	Fundamentals in Electric Energy Systems	Pittsburgh	12	Current
18-390	ECE Co-op	Pittsburgh	0	Past
18-401	Electromechanics	Pittsburgh	12	Past
18-402	Applied Electrodynamics	Pittsburgh	12	Past
18-403	Microfabrication Methods and Technology	Pittsburgh	12	Current
18-411	Computational Techniques in Engineering	Pittsburgh	12	Past
18-412	Neural Technology: Sensing and Stimulation	Pittsburgh	12	Future
18-413	Nano-Bio Photonics	Pittsburgh	12	Future
18-418	Electric Energy Processing: Fundamentals and Applications	Pittsburgh	12	Past
18-421	Analog Integrated-Circuit Design	Pittsburgh	12	Current
18-422	Digital Integrated-Circuit Design	Pittsburgh	12	Current
18-431	Senior Projects	Pittsburgh	Variable	Current
18-432	Senior Projects	Pittsburgh	Variable	Past
18-447	Introduction to Computer Architecture	Pittsburgh	12	Past
18-451	Networked Cyber-Physical Systems	Pittsburgh	12	Future
18-452	Wireless Networking and Applications	Pittsburgh	12	Future
18-474	Embedded Control Systems	Pittsburgh	12	Past
18-482	Telecommunications, Technology Policy & Management	Pittsburgh	12	Past
18-487	Introduction to Computer and Network Security and Applied Cryptography	Pittsburgh	12	Current
18-491	Fundamentals of Signal Processing	Pittsburgh	12	Past
18-492	Special Topics in Speech Processing	Pittsburgh	12	Current
18-493	Electromechanics	Pittsburgh	12	Current
18-496	Introduction to Biomedical Imaging and Image Analysis	Pittsburgh	12	Past
18-499	Internship	Pittsburgh	Variable	Past
18-510	Sensor Systems Design	Pittsburgh	12	Past
18-525	Integrated Circuit Design Project	Pittsburgh	12	Future
18-540	Rapid Prototyping of Computer Systems	Pittsburgh	12	Past
18-541	Advanced Digital Design Project	Pittsburgh	12	Current
18-549	Embedded Systems Design	Pittsburgh	12	Past
18-551	Signal Processing System Design	Pittsburgh	12	Future
18-578	Mechatronics Design	Pittsburgh	12	Past
18-587	Energy Conversion, Control, and Management	Pittsburgh	12	Current

Graduate Courses

Optional descriptive text allowed here.

Course ▾	Course Name ▾	Location ▾	Units ▾	Semester Offered ▾
18-090	Study Abroad	Pittsburgh	Variable	Past
18-090	Trained Signals: Multimedia Processing for the Arts	Pittsburgh	10	Current
18-100	Introduction to Electrical and Computer Engineering	Pittsburgh	12	Current
18-200	ECE Sophomore Seminar	Pittsburgh	1	Current
18-202	Mathematical Foundations of Electrical Engineering	Pittsburgh	12	Current
18-213	Introduction to Computer Systems	Pittsburgh	12	Current
18-220	Electronic Devices and Analog Circuits	Pittsburgh	12	Current
18-221	Sophomore Projects	Pittsburgh	Variable	Current
18-252	Sophomore Projects	Pittsburgh	Variable	Past
18-240	Structure and Design of Digital Systems	Pittsburgh	12	Current
18-290	Signals and Systems	Pittsburgh	12	Current
18-300	Fundamentals of Electromagnetics	Pittsburgh	12	Current
18-310	Fundamentals of Semiconductor Devices	Pittsburgh	12	Past
18-320	Microelectronic Circuits	Pittsburgh	12	Past
18-331	Junior Projects	Pittsburgh	Variable	Current
18-332	Junior Projects	Pittsburgh	Variable	Past
18-340	Digital Computation	Pittsburgh	12	Past
18-341	Logic Design and Verification	Pittsburgh	12	Current
18-345	Introduction to Telecommunication Networks	Pittsburgh	12	Past
18-349	Introduction to Embedded Systems	Pittsburgh	12	Current & Future
18-370	Fundamentals of Control	Pittsburgh	12	Current
18-372	Fundamentals in Electric Energy Systems	Pittsburgh	12	Current
18-390	ECE Co-op	Pittsburgh	0	Past
18-401	Electromechanics	Pittsburgh	12	Past
18-402	Applied Electrodynamics	Pittsburgh	12	Past
18-403	Microfabrication Methods and Technology	Pittsburgh	12	Current
18-411	Computational Techniques in Engineering	Pittsburgh	12	

- Breadcrumbs
- Introduction
- Courses
- Footer quotations

Electrical & Computer Engineering

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HOME / NEWS /

Jayan receives prestigious Air Force Young Investigator Award

This is an optional subtitle.

NOV 16, 2016

SHARE:

BY John Tozzi

Trips and stumbles too often lead to falls for amputees using leg prosthetics, but a robotic leg prosthesis being developed at Carnegie Mellon University promises to help users recover their balance by using techniques based on the way human legs are controlled.

Hartmut Geyer, assistant professor of robotics, said a control strategy devised by studying human reflexes and other neuromuscular control systems has shown promise in simulation and in laboratory testing, producing stable walking gaits over uneven terrain and better recovery from trips and shoves.

Learn more about:

Sherry Stokes

CHIEF MANAGER OF MARKETING AND PUBLICATIONS

Phone: 412.268.5976

Fax: 412.268.7150

Email: [stokes@cmu.edu](#)

COMMUNICATIONS OFFICE WEBSITE →

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Student Exposure

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Hartmut Geyer, assistant professor of robotics, said a control strategy devised by studying human reflexes and other neuromuscular control systems has shown promise in simulation and in laboratory testing, producing stable walking gaits over uneven terrain and better recovery from trips and shoves.

Source: Carnegie Mellon University College of Engineering

Hartmut Geyer and his team focuses their research on principles of legged dynamics and control.

Trips and stumbles too often lead to falls for amputees using leg prosthetics, but a robotic leg prosthesis being developed at Carnegie Mellon University promises to help users recover their balance by using techniques based on the way human legs are controlled.

Hartmut Geyer, assistant professor of robotics, said a control strategy devised by studying human reflexes and other neuromuscular control systems has shown promise in simulation and in laboratory testing, producing stable walking gaits over uneven terrain and better recovery from trips and shoves.

Source: Carnegie Mellon University College of Engineering

This new skeletal robotic orthosis attaches to a person's legs and assists patients in achieving improved gait patterns while walking on a treadmill.

Over the next three years, as part of a \$900,000 National Robotics Initiative study funded through the National Science Foundation, this technology will be further developed and tested using volunteers with above-the-knee amputations.

Joining Geyer on the research team are Steve Collins, associate professor of mechanical engineering and robotics, and Santiago Munoz, a certified prosthetist orthotist and instructor in the Department of Rehabilitation Science and Technology at the University of Pittsburgh.

Source: Carnegie Mellon University College of Engineering

"Understanding how humans control their limbs unlocks unlimited possibilities for robotic prosthesis."

"Powered prostheses can help compensate for missing leg muscles, but if amputees are afraid of falling down, they won't use them," Geyer said. "Today's prosthetics try to mimic natural leg motion, yet they can't respond like a healthy human leg would to trips, stumbles and pushes. Our work is motivated by the idea that if we understand how humans control their limbs, we can use those principles to control robotic limbs."

This is an example of one type of robot.

This is an example of a different robot.

Those principles might aid not only leg prostheses, but also legged robots. Geyer's latest findings applying the neuromuscular control scheme to prosthetic legs and, in simulation, to full-size walking robots, were presented recently at the IEEE International Conference on Intelligent Robots and Systems in Hamburg, Germany. An upcoming paper in IEEE Transactions in Biomedical Engineering focuses specifically on how this control scheme can improve balance recovery.

Geyer has studied the dynamics of legged walking and motor control for the past decade. Among his observations is the role of the leg extensor muscles, which generally work to straighten joints. He says the force feedback from these muscles automatically responds to ground disturbances, quickly slowing leg movement or extending the leg further, as necessary. In the near term, the new method of 3D printing might let doctors test medical treatments on laboratory replicas of patients' own body parts. Drug companies could use such models to test risky new drugs before they're used in humans. "Right now we have animal models—mice and rats—and we have [human] clinical trials, and not a lot in between," Feinberg said. "You can potentially make basically a patient-specific piece of heart muscle."

"Powered prostheses can help compensate for missing leg muscles, but if amputees are afraid of falling down, they won't use them," Geyer said. "Today's prosthetics try to mimic natural leg motion, yet they can't respond like a healthy human leg would to trips, stumbles and pushes. Our work is motivated by the idea that if we understand how humans control their limbs, we can use those principles to control robotic limbs."

Source: Carnegie Mellon University College of Engineering

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Feinberg's research was supported by grants from the National Health and the National Science Foundation. But the shortening strategy he started with, hacking an off-the-shelf printer and buying some gelatin packs, still informs how his lab works. Though Carnegie Mellon has applied for a patent on the support bath, his team is releasing information on how to modify the MakerBot printer to handle biological materials under open source licenses. He has also demonstrated the bioprinting technique at a local school, using chocolate frosting instead of collagen.

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"We think it's a lot easier to use these less expensive machines," Feinberg said. "I can do essentially modify it any way we need, it works." ■

For more information or to reach Professor Geyer, contact Lisa Kulick at (412) 268-5444.

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Mechanical Engineering at Carnegie Mellon
2001 Forbes Avenue
Pittsburgh, PA
15260-1500

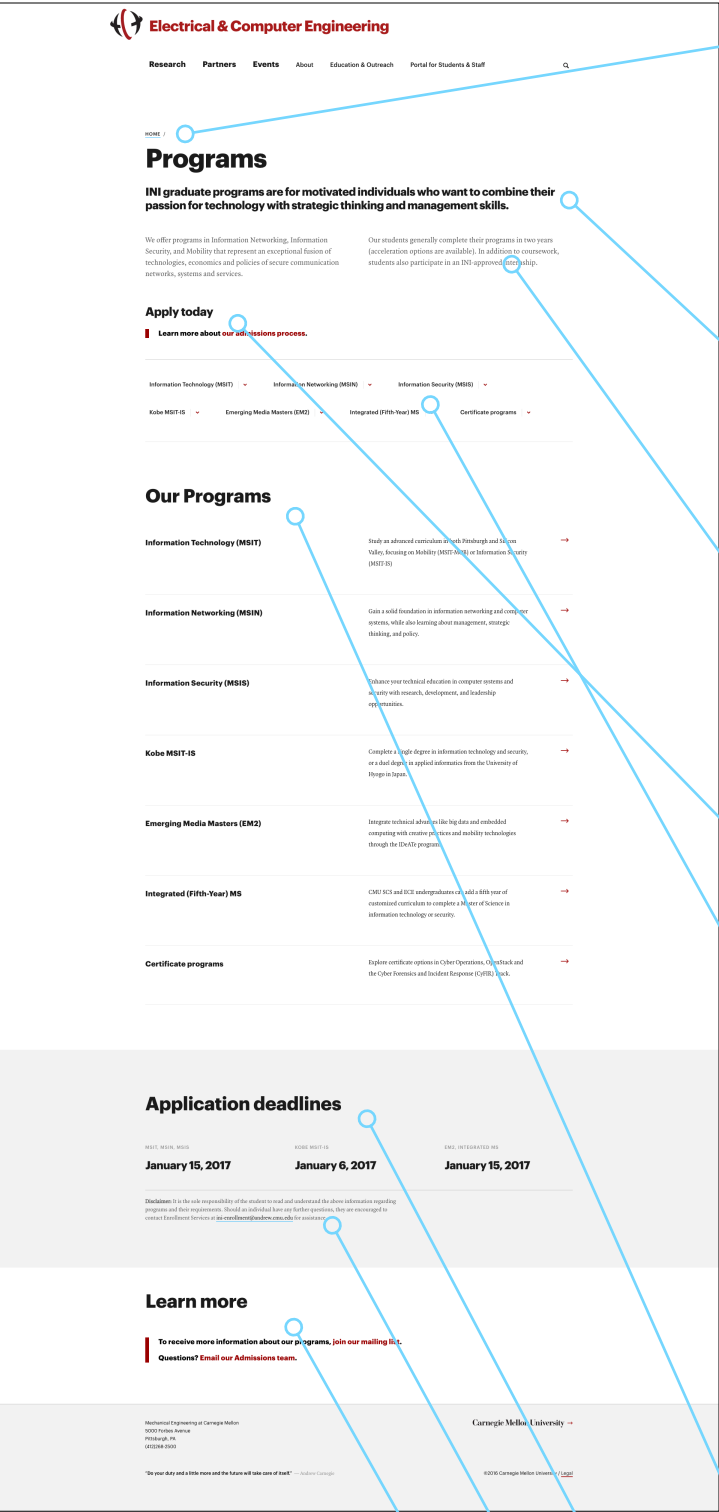
Carnegie Mellon University —

"Do your duty and a little more and the future will take care of itself."
—Audrey Hepburn

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- Breadcrumbs
- Article content
- Footer quotations

Programs



Breadcrumbs

Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

Summary sentence

A single sentence that summarizes the page content. Limited to 150 characters. Optional.

Introduction

One to two paragraphs that elaborate on the summary sentence (if using) and provide more details.

Apply call-to-action

Links to another page.

Local Navigation

Page has the option of displaying or not displaying navigation (manually set). Local navigation display rules are as follows:

1. If the page has children, it displays children.
2. If a menu element has children, it displays a drop menu of its children.
3. If the page doesn’t have children, it displays siblings, with the page designated as a “current” with appropriate CSS.

Programs listing

Displays a list of programs or degrees offered. Each program/degree has a title and a sentence of description, linking to their detail pages.

Deadlines

Shows deadlines associated with program.

Disclaimer

Shows disclaimer text.

Learn more call-to-action

Includes links to two separate form pages.

CMS data elements

- Breadcrumbs
- Summary sentence
- Introduction
- Local navigation
- Programs
- Apply call-to-action
- Deadlines
- Disclaimer
- Learn more call-to-action
- Footer quotations

Carnegie Mellon University
Ydstie Research Group

Ydstie Research Group

We are experimental fluid dynamicists interested in microfluidic, interfacial-fluid mechanics, and surfactant transport. We develop innovative, multiscale experimental methods to probe and control liquid-liquid interfaces, using scaling analysis, theory, and numerics as tools to complement our experiments. By developing strategies to separate timescales for relevant processes, we have been able to advance the fundamental engineering science of multiphase flows.

Our group and our work is interdisciplinary and collaborative. We enjoy several strong collaborations with other academic research groups around campus and elsewhere, including strong connections with industry.

Partner with us
Add a question

- 01 Faculty
- 02 Projects
- 03 Research team
- 04 Courses
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Faculty

Dr. B. Erik Ydstie

Professor of Chemical Engineering, Professor of Electrical Engineering at Carnegie Mellon (Courtesy)
Professor of Electrical Engineering at NTNU, Trondheim, Norway

Dr. B. Erik Ydstie received his BS in Chemistry from the University of Trondheim in 1977 after which he entered Imperial College of Science and Technology in London. He received his PhD in Chemical Engineering and the Diploma of Imperial College in 1982. Prof. Ydstie entered academia at the University of Massachusetts in 1982 where he taught and did research until 1992 when he joined the Department of Chemical Engineering at Carnegie Mellon. Prof. Ydstie also has held or holds appointments in the Departments of Electrical Engineering and in Materials Science at the Newswegian University of Science and Technology in Trondheim. He held academic visiting positions at the University of Newcastle in Australia, Ecole des Mines de Paris, and Imperial College in London. He served on the Advisory Boards of the ACS Petroleum Research Fund and Worcester Polytechnic Institute. Prof. Ydstie has had industrial appointments as R&D Director of ELKEM ASA (1999-2008) and as Board Member and Chairman of Solar Silicon LLC. Prof. Ydstie founded Industrial Learning Systems to take advantage of his advances in adaptive control, he is the current CTO/CEO of that company. Professor Ydstie has consulted with many major chemical companies, including PPG, Alcoa, Elkem, Emerson Process Management, Heller-Ekman, REC Silicon and Hydro Solar.

OFFICE
Industry Hall 421A
PHONE
+1 412 225
FAX
412 268 7139
EMAIL
ydstie@cmu.edu
GOOGLE SCHOLAR
B Erik Ydstie
CURRICULUM VITAE
Download PDF

Projects

We study organization and mechanics of subcellular structures including the nucleocytoplasmic transition to address a wide range of biologically-relevant questions. Focusing on our strengths incorporating physics and engineering into complex biological questions has led us to high impact results and a large range of biomedical applications.

Fundamental studies linking nuclear rheology and gene expression

We have developed a new paradigm for how force on cells impacts gene expression. Using responsive protein expression in cells exposed to shear stress we have shown a dose dependent and temporal shift in the developmental properties of the cell nucleus. Cells, yet statistically identical changes were observed using abstract models involving stochastic particle interactions, phase field and rheology theory. These engineering techniques have allowed us to provide unique insights into mechanistic cell function.

Research Team

Brian Holt
POST DOCTORAL
Research Interests:
Water resources, Risk analysis and risk communication, Reservoirity
Email:
bholt@andrew.cmu.edu
BRIAN'S CV

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BRIAN'S CV

Past Students

- Sagi Perel, PhD
- Pete Lund, MS
- Srinivash Rajendran, MS
- Soma Todorova, PhD
- Yao Zhao, MS
- Madhumitha Raghu, MS
- Hishikesh Rao, BS

Courses

Current Courses

Optional descriptive text allowed here.

Course	Course Name	Lecture	Units	Semester Offered
18-050	Image, Video and Multimedia	Pittsburgh	12	Fall 2018
18-090	Special Topics in Signal Processing-Cognitive Video	Pittsburgh	12	Spring 2017

Awards & Honors

- Plenary Lecture Japan/Swray Technology Forum, 2001
- Distinguished Lecturer, University of Alberta, 2005
- AIChE CAST Division Plenary Lecture, Annual Meeting, 2005
- 13th Roger W. Sargent Lecture, Imperial College, 2006
- Computing and Systems Technology Award, CAST Division of AIChE, 2007
- Keenan Symposium Lecture, MIT, 2008
- Kim Li Award for Excellence in Education, CMU, 2008, 2011
- AIChE CAST Division Plenary Lecture, Annual Meeting, 2011
- DOWD Fellow, Carnegie Institute of Technology, 2012
- Best Paper Computers & Chemical Engineering, 2012

Publications

2015

2014

2013

R. Kankanasakulke, G. Hug-Glanzmann, "Transmission Capacity Enhancement by Optimal Usage of Storage Devices," PES General Meeting, Detroit, USA, 2011.

D. Zhu, G. Hug-Glanzmann, "Real-Time Control of Energy Storage Devices in Future Electric Power Systems," PowerTech Conference, Trondheim, Norway, 2011.

G. Hug-Glanzmann, "A Hybrid Approach to Balance the Variability and Intermittency of Renewable Generation," PowerTech Conference, Trondheim, Norway, 2011.

2012

Patents

B. E. Ydstie, Apparatuses, Systems, and Methods Utilizing Adaptive Control, US 2009/0132064 A1, 2009, Pub. Date May 21, 2009

B. E. Ydstie, S. Ranjan, B. Sukumar and S. Seetharaman, A Method for Making mono and multi-crystalline Silicon Sheets, PCT/US2009/006114, Pub. Date, Nov 17, 2011

Cheng X., C. Wen, R. Kephart, B. E. Ydstie, Improved Decentralized Industrial Process Simulation System, Patent App., June, 2010

B. E. Ydstie, Apparatuses, Systems, and Methods Utilizing Adaptive Control, US 2009/0132064 A1, 2009, Pub. Date May 21, 2009

B. E. Ydstie, S. Ranjan, B. Sukumar and S. Seetharaman, A Method for Making mono and multi-crystalline Silicon Sheets, PCT/US2009/006114, Pub. Date, Nov 17, 2011

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Media Mentions

SCIENCE REVEALS THE GROTESQUE
An entangling messianic 20 years of technology to reveal the core patterns in the world. A computer cracks the pattern to a database of signature coming which could lead to the world's greatest threat.

CMU leads scanner unlocks secrets from the past
A 140-year-old black ink manuscript is a secret treasure right before your eyes. How can you see it clearly and finally? From now, through Carnegie Mellon University professor Tang Cai is using his digital scanning technology to bring more about ancient handwritten research the meaning and value of this rare's spiritual Church.

Carnegie Mellon's Yang Cai uses new scanning system to plot digital graveyards
Indianapolis, Ind. (UPI) — Carnegie Mellon University's Yang Cai is developing new technology that could revolutionize the way archeologists work.

Tech to thwart food poisoning, bioterror
Researchers from Carnegie Mellon University are working with another government effort to develop a "SporeSensor" that can detect spores for finding and tracking water pipe fighting health insurance issues. The team will only tell nation officials but also some people to get off spore eating animal products.

Mechanical Engineering at Carnegie Mellon
2000 Forbes Avenue
Pittsburgh, PA
15260-1503

"Be your day and a little more and the future will still come to you"

— Albert Einstein

Carnegie Mellon University

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Electrical & Computer Engineering

ResearchPartnersEventsAboutEducation & OutreachPortal for Students & Staff

HOMESearch

About Carnegie MellonUniversity in Rwanda

We're creating a new generation of graduates taking advantage of Africa's unique opportunities in one of the fastest growing economic regions of the world.

to the potential challenges in
endeavors
3) connect abstract theory to
4) write a business plan
5) practice creativity and
of opportunity for v

With a century-long history that has hosted 19 Nobel Laureates, Carnegie Mellon University is renowned as one of the worlds leading engineering institutions. Now, its Center of Excellence in Information and Communication Technology extends its global reach into Africa.

Based in Rwanda, the Center of Excellence benefits from the country's bold ICT strategy and our own culture of innovation to provide a platform for students to become technology thought leaders in emerging markets. Masters degree programs in Information Technology and Electrical and Computer Engineering are each taught by globally recognized faculty to the same rigorous standards as the main Pittsburgh campus.

Our programs extend across countries and continents, rooted in an academic philosophy that develops our students into the responsible global leaders. They provide a unique opportunity for students to gain a balanced international perspective with an option to spend semesters at Carnegie Mellon's Pittsburgh and Silicon Valley campuses.

Now in Africa, Carnegie Mellon is excited to be pioneering a culture of inspiring innovations that change the world.

Our programs

Masters of Science in Information Technology →Masters of Science in Electrical and Computer Engineering →

Apply today

Learn more about our admissions process.

A new campus vision

We've begun construction on a brand-new campus in the Kigali Technology Park.
SEE THE FUTURE CAMPUS

About Carnegie Mellon

Carnegie Mellon University is a private research university based in Pittsburgh, Pennsylvania. The university began as the Carnegie Technical Schools founded by Andrew Carnegie in 1900. In 1912, the school became the Carnegie Institute of Technology and began granting four-year degrees.

Carnegie Mellon is ranked 1st for graduate studies in computer science, a position consistently held in the past except in 2009. It is also 5th for graduate studies in engineering, 7th for graduate studies in fine arts, 7th for graduate studies in electrical engineering, 9th for graduate studies in public affairs, 16th for graduate studies in business, 19th for graduate studies in economics, 9th for graduate studies in statistics, and 21st for graduate studies in psychology in the 2014 rankings released by U.S. News & World Report.

The recognition of Carnegie Mellon as one of the best research facilities in the USA has a long history, as early as the 1987 Federal budget CMU was ranked as third in the amount of research dollars with \$41.5 million with only MIT and Johns Hopkins receiving more research funds from the Department of Defense.

Carnegie Mellon has made a concerted effort to attract corporate research labs, offices, and partnerships to the Pittsburgh campus. Apple Inc., Intel, Google, Microsoft, Disney, IBM, General Motors, Bombardier Inc., Yahoo!, and the Rand Corporation have established a presence on or near campus.

Sources: Source #1 Provided
Caption Space If Needed

About Rwanda

Rwanda is a sovereign state in central and east Africa. With an average GDP growth rate of 8.1% between 2001-2012, it has one of the fastest growing economies in the world.

The Government of Rwanda has invested substantial resources and political capital in enable the country as an information technology hub. It has excellent GUTIE internet coverage, has the third largest deployment of One Laptop Per Child XO Laptops, has several accelerators and tech hubs, has a visa classification for ICT entrepreneurs and has codified it's dedication to ICT in its Vision 2020, EDPRS II and Smart Africa Manifesto documents.

Named East Africa's number one ICT nation by the United Nations Conference on Trade and Development (UNCTAD), Rwanda has benefited from ICT-based investments by lucrative international players such as Microsoft, Nokia, Visa and Terracoin.

This enabling environment, when coupled with the low corruption and high quality of life that Rwanda offers, makes it a natural setting to experiment, research and build the the innovative ideas the Carnegie Mellon University is renowned for.

Sources: Source #1 Provided
Caption Space If Needed

Northeastern Engineering at Carnegie Mellon
2000 Forbes Avenue
Pittsburgh, PA
15260-1503

"The year 2014 and a little more and the future will take care of itself."
—Andrew Carnegie

Carnegie-Mellon University —

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Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

A single sentence that summarizes the page content. Limited to 150 characters. Optional.

YouTube video embed can appear between summary sentence and introduction, or after introduction if not using a summary sentence.

One to two paragraphs that elaborate on the summary sentence (if using) and provide more details.

Displays two to three calls-to-action, linking to appropriate subpages.
Customizable per page.

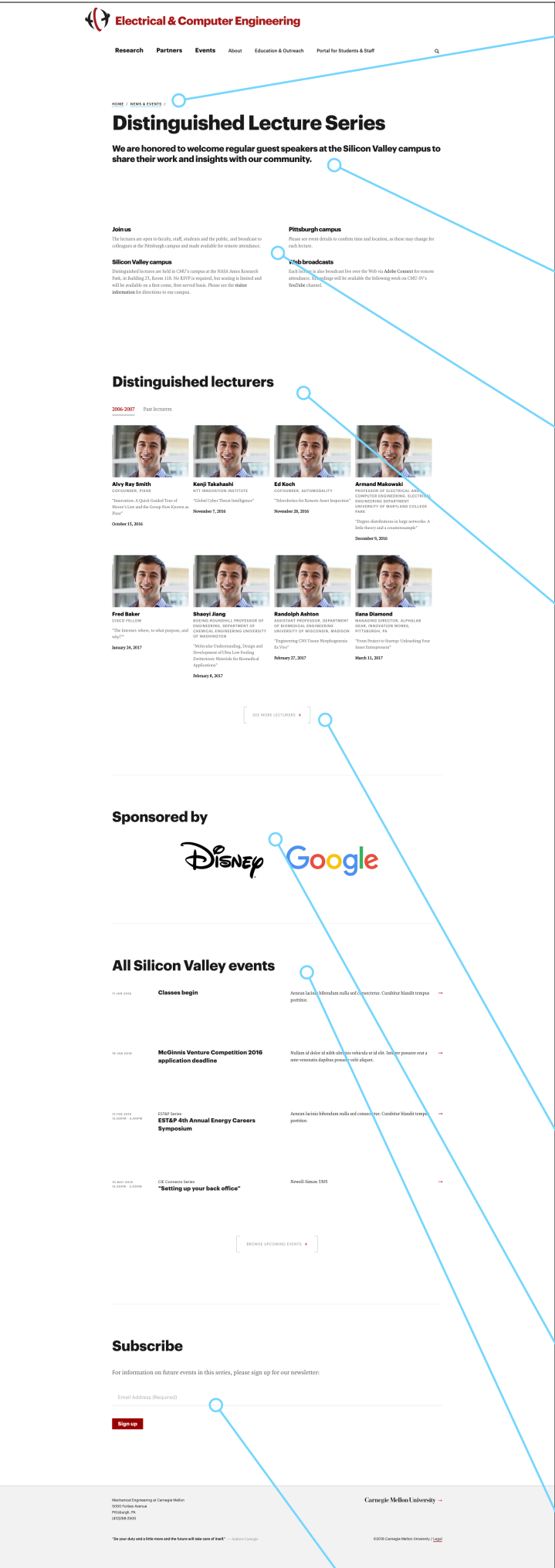
Links to another page.

Features one project related to the department administration. Has a title, large image, one- or two-sentence summary, and call-to-action with a URL. Manually selected.

Additional copy can be added with individual headers and inline images with sources and captions.

- Breadcrumbs
- Summary sentence
- Youtube video
- Introduction
- Programs call-to-action
- Apply call-to-action
- Featured subpage
- Secondary page content
- Footer quotations

People Landing



Breadcrumbs

Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

Summary sentence

A single sentence that summarizes the page content. Limited to 150 characters. Optional.

Introduction

Multiple paragraphs that elaborate on the summary sentence (if using) and provide more details.

People listing

Loads in page eight modules based on the chosen filter. Each module is manually created and includes:

- Image
- Name
- Title
- Lecture or project name (this field label should be editable depending on page use)
- Date (optional) — Pages that use the date field should display modules in chronological order. Modules that have passed their date are moved to the “Past lecturers” filter and are not shown unless that filter is selected.

If fewer than eight modules exist, the “See more lecturers” button is not displayed at the bottom. Otherwise, “See more lecturers” loads additional modules within the page, eight (or fewer) modules at a time. This button is editable.

Sponsors

Sponsors are represented by corporate logos. Logos can be linked to unique URLs.

Events

Display the next four upcoming events in the department. Each displays a start date (or today’s date if within a range), time (if specified), name, location/description, and link to event detail page. “Browse upcoming events” button links to the events landing page.

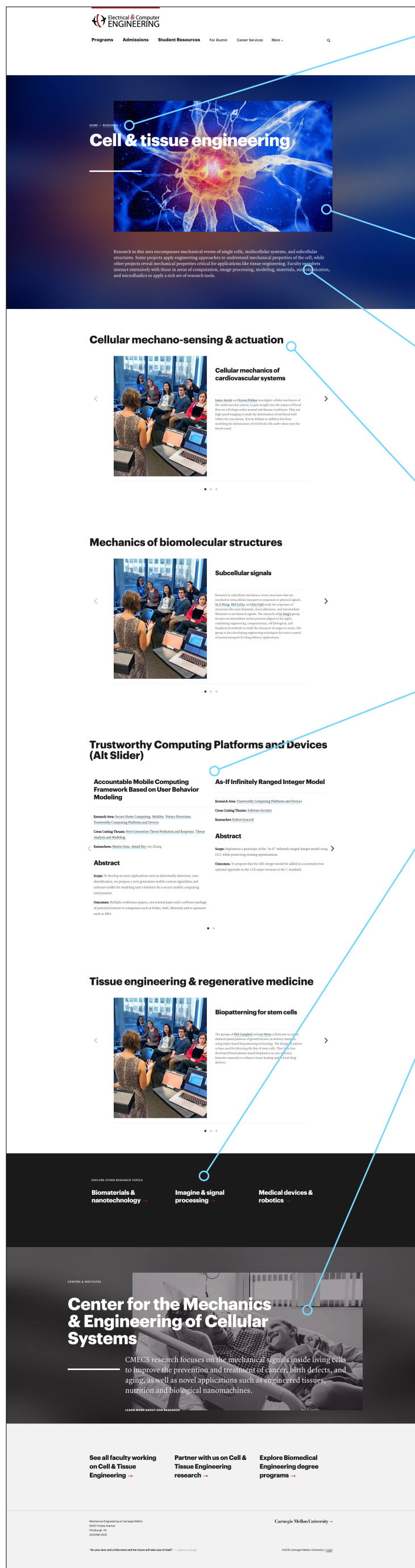
Subscribe call-to-action

Simple form for email intake. Clicking “Sign up” takes users to a confirmation page.

CMS data elements

- Breadcrumbs
- Summary sentence
- Introduction
- People modules
- Sponsor logos
- Events
- Subscribe call-to-action
- Footer quotations

Topic Landing



Breadcrumbs

Breadcrumbs show all page parents separated by slashes. The final page parent (may be “HOME” if page is in top-level navigation) is followed by a slash. Current page is NOT included in breadcrumbs.

Hero image

Displays a large image behind the page content.

Introduction

Up to 700 characters of copy. Should provide a summary of the research topic and the department's research goals.

Subtopic and/or project listings

Subtopics are listed with headers and include project listings. Projects are displayed in a slider and include a large image (optional), title, and description. If projects do not include an image, two projects can be displayed side-by-side.

Research calls-to-action

Other topic landing pages are listed and link to their pages.

Featured institute/center

Features one center or institute related to the topic. Manually chosen. Has a title, large image, one- to two-sentence description, and call-to-action with a URL.

CMS data elements

- Breadcrumbs
- Hero image
- Introduction
- Subtopics
- Projects
- Topic landing pages (other topics under Research parent page)
- Featured institute/center
- Topic calls-to-action
- Footer quotations