Title	Summary	JC fav	Listener fav	Getting started	Guest(s)	Keywords	Related writings	Related writing links
99: You Can Say a Boat	Andrei Chichak spoke with us about MISRA-C and ethics.		*	*	Andrei Chichak	misra ethics canada engineering		
98: Figments of My Imagination	Chris and Elecia talk about memetics, learning, and processors.					babble learning	Growing Out of Uno	http://www.element14.com/c
97: Bubblesort Yourself	Professor Paul Fishwick joined us to talk about CS and STEM education, excellent analogies, and the crossover of art and technology.				Paul Fishwick	education analogies models	Formalized Synesthesia	http://www.element14.com/c
96: Yarn Is Very Serious Business	Carrie Sundra spoke with us about doing a Kickstarter on her own… and nearly failing.				Carrie Sundra	yarn kickstarter mudder		
95: The Elon Musk of Earth	This week we discuss lasers, internet of things, and static electricity. Our extremely opinionated guest has a lot to say, including some scatological humor.				Ani	cats jokes	Device Internationalization	http://www.element14.com/c
94: Don't Be Clever	Dennis Jackson spoke with us about drones (and Airware), simple code, and learning.		*	*	Dennis Jackson	fda faa drones learning engineering	Be Excellent to Each Other	http://www.element14.com/c
93: Delicious Gumbo	Joel Sherrill spoke with us about real time operating systems, free and open source software, interns, and space.		*		Joel Sherrill	rtems rtos foss space	RTOSs and Brownies	http://www.element14.com/c
92: Everybody Behave, Please	James Laen Neal from OSHPark spoke with us about starting a business, helping open source hardware, and throwing wild parties.	*	*	*	James Laen Neal	startup oshpark oshw boards	Make Anything	http://www.element14.com/c
91: Save Us from Astronauts	Sophi Kravitz, electrical engineer and Hackaday Mythical Creature, came on to leak the new Hackaday Prize details!				Sophi Kravitz	hackaday balloons space	How to Win the Hackaday Prize (and Other Design Challenges)	http://www.element14.com/c
90: Stick It in a Pumpkin	ThingM's Tod Kurt joined us to talk about the most important part of every embedded system: blinking lights. ThingM has been making I2C lights (BlinkM, MinM and MaxM) since 2006.		*		Tod Kurt	art startup business thingm	Solving a Different Problem	http://www.element14.com/c
89: I Have New Batteries	Chris Savage talks about building a community and about stopping projects when life intrudes.	*	*		Chris Savage	parallax communities		
88: Science Is a Lot like Quilting	Same day PCBs?!? Danielle Applestone chatted with Chris and Elecia about desktop CNC milling using OtherMachine's OtherMill.		*		Danielle Applestone	othermill boards startup milling		
87: Make My Own Steel Foundry	Chip Gracey spoke with us about founding Parallax chip design, and the Propeller with its many cores.				Chip Gracey	parallax hdl history		
86: Madeupical Word	Erin McKean is a lexicographer, programmer, and start-up founder. We spoke to her about Wordnik (the online uber dictionary), Reverb (smarter recommendations), and her many books.		*		Erin McKean	words startup writer	The Words We Use Define Us	http://www.logicalelegance.c
85: Stalked by Hoopers and Engineers	Scott Miller built a hula hoop with Bluetooth, an inertial measurement unit, a 32-bit processor, an 8-bit processor, and a slew of individually addressable LEDs. It makes wild patterns when you move. Scott's "normal" company, with all of its ham radio equipment, is Argent Data Systems. The hula hoops are Hyperion Hoops.	*	*		Scott Miller	hulahoop ham startup		
84: You Can't Make Money Taking Tests	The founders of Bluestamp Engineering spoke with us about running a hands-on summer engineering program for high school students (while keeping their day jobs).				Dave Young / Robin Mansukhani	education		
83: The First Time I Was Electrocuted	Raman Pi creator Mark Johnson spoke with us about spectrometers, 3D printing, and competing in the Hackaday Prize.		*		Mark Johnson	hackaday 3dprinting spectrometer makers	Why this should win the Hackaday Prize	http://www.logicalelegance.c
82: I Was a Chewbacca Person	Jen, Chris, and Elecia talk about the movies that influenced them to go into engineering.				Jen Costillo	movies		
81: Two of Those People Can't Be Ducks	Chris and Elecia babble up a show about gifts, conferences, and makers.					babble conference		
80: Most of Us Are Human Beings	Bill Winterberg chatted with Elecia about leaving embedded engineering to become a financial planner then to being a technology adviser to other financial planners.				Bill Winterberg	financial_planning leapfrog		
79: Not as Efficient as the Borg	Vicky Tuite came on the show to chat with Chris and Elecia about EVAOS, a company that upgrades Ford trucks into plug-in hybrids.				Vicky Tuite	electric_cars		
78: Happy Cows	Chris Svec has an idea about adding empathy to software development. It is a good idea.	*	*	*	Chris Svec	empathy engineering	Be Excellent to Each Other	http://www.element14.com/c
77: Goldfish, Fetch My Slippers!	Sophi Kravitz joined us to talk about working on neat things: Wobble World, Oculus Rift, Unity, goldfish training, and BlueStamp Engineering.	*			Sophi Kravitz	consulting makers vr		
76: Entropy Is for Wimps	Ron Sparks spoke with us about the convergence of makers and ham radio enthusiasts.				Ron Sparks	ham space_balloons makers		
75: End up in a Puppy Fight	Glenn Scott and Nacho Solis spoke with Elecia about content-centric networking, being research scientists, and working at PARC.				Glenn Scott / Nacho Solis	networking science		
74: All of Us Came in Sixth	John Schuch talked with us about being a semifinalist in the Hackaday Prize, his project, and entering other contests.		*		John Schuch	contests hackaday water_conservation		
73: That's a Waste of Bits	Christopher and Elecia look through listener email, check in on what past guests are up to, and consider the best and worst of science in recent fiction.					babble hackaday scifi		
72: This is My NASA Phone	Emile Petrone talked with Chris and Elecia about Tindie: buying, selling, changing the rate of hardware innovation, having a burgeoning start up, connecting government agencies to craft electronics, etc.				Emile Petrone	tindie boards maker startup		
71: Dirty Your Mindscape	Intellectual property attorney Judith Szepesi discusses what Elecia (and startups) need to know about patenting. Judith is a founding partner at HIP Legal, LLC.		*		Judith Szepesi	law patent	Blocking Patents with Open Source Prior Art	http://www.element14.com/c
70: Make Us All Into Sherlock Holmes	Rob Faludi, author of Building Wireless Sensor Networks and chief innovator at Digi International spoke with us about Zigbee, writing, and experimenting.			*	Rob Faludi	bluetooth art maker writer		
69: Look at This Entire Aisle of Standoffs	Mike Szczys discusses Hackaday, the SPACE! prize, being a professional musician, and visiting Silicon Valley.		*		Mike Szczys	hackaday music writer	Hackaday Wordy	https://hackaday.io/project/3
68: Dancing with Hundreds of Women	Angie Chang joined us to talk about the coding bootcamp Hackbright Academy, their upcoming hardware hackathon, Girl Geek Dinners, and the extreme awkwardness of networking.				Angie Chang	education hackathon social_awkwardness	The hardware fun continues	http://www.logicalelegance.c
67: Software for Things that Can Kill People	In front of a live audience, Chris and Elecia talk about their experiences with FAA and FDA. This show was recorded live in front of the Silicon Valley Automotive Open Source meetup group at Hacker Dojo.	*				faa fda live engineering automotive		
66: As Simple as Possible	Jack Gassett is the creator of the open source FPGA Papilio development board. He joins Chris and Elecia to answer the age-old question of how to get started with FPGAs.	*	*	*	Jack Gassett	fpga		
65: Resonant Frequency of My Butt	Darma is a nascent start-up focusing on optical sensors in a seat cushion to aid in posture, stress reduction, and meditation. Chris and Elecia speak with CEO Dr. Junhao Hu and Sharif Kassatly about building a company, going through the Haxlr8r's accelerator program, and choosing a crowd funding platform.				Junhao Hu / Sharif Kassatly	startup kickstarter posture		
64: Making Making Embedded Whoops	Chris hosted the show, asking Elecia what it was like to write her Making Embedded Systems book.		*		Elecia White	writing writer	Making Embedded Systems	http://www.amazon.com/gp/
63: Dingo-Rabbit Deathmatch	Steve Dalton told us about starting a hackerspace, visiting Silicon Valley with a homebrew incubator group, and tech and fencing Australia.		*		Steve Dalton	hackerspace startup australia		
62: Costs a Penny to Go to the Bathroom	Josh Bleecher Snyder joined us to talk about PayPal's Beacon, being acquired, the Go programming language, BTLE, computer vision, and working at a large company after founding small ones.	*	*		Josh Bleecher Snyder	ble acquisitions		
61: I Want Programmable Pants	Jen Costillo brings Fashion Professor Kyle Chan to discuss wearables from a different perspective.				Jen Costillo / Kyle Chan	wearables fashion		
60: Fun Things You Can Make Out of Beagles	Jason Kridner joined us to talk about the BeagleBone Black... and other things.		*		Jason Kridner	beagleboneblack projects	Beagle Bone Black	http://www.logicalelegance.c
BONUS: Heartbreak Afterparty	Chris and Elecia went on vacation so this week we have music for you: the Ballistic Cats.				Ballistic Cats	music		
59: Vision for Simple Minds	Craig Sullender of ChipSight joined Elecia and Christopher to talk about machine, computer, and embedded vision.		*		Craig Sullender	machine_vision startup		
58: Use These Powers for Good	Joe Grand spoke with us about his life as Kingpin, hardware hacking, hosting a TV show, and being a Hackaday judge.	*	*	*	Joe Grand	hackaday security		
57: Engineering on the Run	Ken Milnes talked to Elecia and Chris about his career developing augmented reality for sports broadcasting.	*			Ken Milnes	sports		
56: Rodents of Unusual Size	Matt Haines and Tom Byrne spoke to Elecia and Chris about Electric Imp. This discussion goes far beyond our first with Matt (Episode 6!). It is more software and implementation oriented than last week's Amp Hour.				Matt Haines / Tom Byrne	electric_imp projects		
55: Embedded Systems and Cricket	Radhika Thekkath, CEO of Agivox, joined Elecia to talk about her start up, entrepreneurship in Silicon Valley, and getting NSF SBIR grants.				Radhika Thekkath	entrepreneur grants		
54: Oh the Hugh Manatee	Elizabeth Brenner returned to the show to talk about the are-you-ok widget that she and Elecia have been working on. (The initial problem-statement show is episode 17.) There is now a SparkFun tutorial so you can build one of the are-you-ok widgets yourself.				Elizabeth Brenner	projects electric_imp are_you_ok	Sparkfun tutorial	https://learn.sparkfun.com/tu

Episode	Description				Guest(s)	Tags	Resource	URL
BONUS: From Solid Con	Elecia attended O'Reilly's Solid Conference, recording a few of the people she met there. Note: this episode is recorded in a noisy location.				Erin Mulcahy / Jack Mudd / Laurie Yoler / Taylor Stein / Ahmed Daoud / Terrence McKenna	conference		
53: Being a grownup engineer	Jack Ganssle shared his wisdom on being a good embedded software engineer (hint: it takes discipline).	*	*	*	Jack Ganssle	grownup engineering	Be Excellent to Each Other	http://www.element14.com/c
52: Maximize the sonic boom	Elecia spoke with Micheal Worry, CEO of Nuvation, about engaging with and working at a design firm.	*			Michael Worry	design_firm		
51: There is no crying in strcpy	Jen Costillo joins Elecia and Christopher to discuss their experiences interviewing (both as interviewer and interviewee).		*	*	Jen Costillo	interviewing	Conducting a Technical Interview	http://www.oreilly.com/pub/e/
50: The podcast formerly known as...	Christopher White and Elecia celebrate a year in podcasting by talking about the show. Then they decide whether or not to change the name of the show to Embedded (yes).	*				babble introspection		
49: Is that an Arduino in your pocket	Tenaya Hurst shares her incredible enthusiasm for teaching Arduino and the San Jose's Tech Museum of Innovation (The Tech). Being a geo-athrop-actress, Tenaya teaches chemistry, geology, Arduino, and beginning wearables for the Tech, for their Galileo summer camp, for Oakland's Workshop Weekend, and on her own recognizance through her website.		*	*	Tenaya Hurst	enthusiasm education	Tinkering For Dummies	http://www.logicalelegance.c
48: Widgets on the hands of ants	Dr. Kevin Shaw, CTO of Sensor Platforms, spoke with Elecia about his career progressing from designing MEMS to building a company that makes sensor fusion algorithms. Wandering from Internet of Things to Singularity University to power management in Android development, Kevin and Elecia wide ranging conversation.				Kevin Shaw	sensors		
47: Bridge of toothpicks	Nathan Tuck joined us to chat about varied topics relating to being an embedded (and graphics) engineer (and manager). Nate works at NVidia on the Tegra K1-64.				Nathan Tuck	managing engineering graphics mudder		
46: I'm painting the turtle	Jennelle Crothers explained to Elecia what a technology evangelist does. Of course, it wasn't an embedded technology but it was still amusing. Plus, Elecia got to play with a Surface Pro.				Jennelle Crothers	microsoft		
45: Yanking on a cat's tail is the only way to learn	David Anders joined Elecia to chat about open source hardware, what it means, how to do it, and why.				David Anders	oshw		
44: Light Up strikes back	Josh Chan and Tarun Pondicherry, founders of Light Up returned to the show. In episode 7, they were midway through their kickstarter, planning to make a product to teach electronics to elementary and middle school students. They've start shipping, even distributing, their MiniKits (other kits will ship soon!). Elecia asks them if building their business and shipping the product went according to plan.				Josh Chan / Tarun Pondicherry	education startup kickstarter		
43: A lot of high-falutin' math	Tony Rios from MEMSIC spoke with Elecia about inertial systems and tuning algorithms used in sensor fusion (i.e. Kalman). The IMU380 will appear soon, creating a whole line of relatively inexpensive quality inertial measurement and inertial navigation systems.	*			Tony Rios	sensors inertial mudder		
42: Blocks of gold with LCD displays	Christopher White and Elecia talk about the failed startups (and projects) they've been through, focusing on identifying how to discern the end is nigh.					babble introspection engineering		
41: Pink universes die really quickly	Micah Elizabeth Scott spoke about Fadecandy, a really neat way to control smart LEDs (NeoPixel, AdaFruit's term for the WS2812). The conversation ranged from beautiful LED control algorithms and open source embedded projects to triangle tessellations, art, and identity.	*	*		Micah Elizabeth Scott	projects maker fadecandy oshw math art		
40: Mwahaha session	Evil Mad Scientist's Lenore Edman talks about what evil mad scientists do on their path to world domination. Surprisingly, it consists largely of art, education, and soldering.				Lenore Edman	emsl art maker		
39: I blame space	Jen Costillo joined Elecia to talk about Jen's start-up: Bia Sport. They discuss the difficulties of being in an underfunded start-up as well as the joy of first shipping the product as well as their upcoming conference talks.				Jen Costillo	startup kickstarter conference		
38: Blame the monkey	Producer Chris White and Elecia discuss some insurmountable problems and some strategies for approaching them.					babble engineering problems	My checklist for debugging insurmountable issues	http://www.logicalelegance.c
37: Surf's up	Dr. Karen Shell and Elecia talk about modelling vs. building models, ocean albedo vs. ice, climate vs. weather, and science vs. policy. They gloat about being on vacation only intermittently.				Karen Shell	models climate vacation mudder		
36: Drive the boat with a Wii mote	Elecia gushes about her favorite logic (and protocol) analyzer to Saleae co-founder Mark Garrison. They also discuss start-ups, manufacturing, and covering yourself with rum and pretending to be a pirate when harbor patrol arrives.		*		Mark Garrison	saleae startup entrepreneur		
35: All these different reasons why you might want to do something	Want to learn how to get from idea to schematic, through layout, all the way to physical boards? Elecia spoke with Chris Gammell about his Contextual Electronics course to teach the missing steps between what an EE learns in college and what a design engineer's job entails.	*			Chris Gammell	contextual_electronics electronics learning podcasts		
34: Really big cabbage	Elecia describes to Christopher how to design and create a firmware update mechanism. Hilarity ensues.					bootloaders	Making Embedded Systems	http://www.amazon.com/gp/
33: Quitting my Finnish lessons	Alison Chaiken and Elecia discuss what you need to know to get into development for the automotive market.				Alison Chaiken	automotive oshw foss		
32: Woo woo woo	Patrick Kane is the director of the Cypress University Alliance, working with colleges to provide development kits and information to college (and high school) students.				Patrick Kane	cypress fpga		
31: If you see a dongle run away	Producer Christopher joins Elecia to look through their mailbag and talk about gift ideas.					babble podcasts	Intro to Podcast	http://www.logicalelegance.c
30: Eventually lightning strikes	James Grenning joined Elecia to talk about how to be a good programmer using Test Driven Development (TDD). James' excellent book is on how to use TDD: Test Driven Development for Embedded Systems.	*	*		James Grenning	tdd engineering		
29: Ducking the quadcopter	Kathleen Vaeth of MicroGen Systems spoke with Elecia about energy harvesting using MEMS devices.				Kathleen Vaeth	energy startup		
28: A lot of wish fulfillment	Author Laura Lemay spoke with Elecia about writing books, APIs, code, and science fiction. Laura wrote many of the Teach Yourself ... in 21 Days books: her bibliography on Amazon.				Laura Lemay	writing writer		
27: You are blowing my mind	This is a series of short interviews from the MEMS Industry Group Executive Congress and the 2013 IEEE Global Humanitarian Technology Conference.				Ivo Stivoric / Sam Guilaume / Dave Rothenberg / Stephen Walsh / David Peter	conference mems	Introducing myself	http://www.logicalelegance.c
26: The tofu problem	In this in-depth technical discussion, Dr. Ken Lunde helps Elecia understand how to internationalize her (memory constrained) device.				Ken Lunde	localization internationalization writer	Device Internationalization	http://www.element14.com/c
25: Thunderdome for antennas	Jen Costillo surfaced briefly from her startup-induced blackout to share her wisdom about manufacturing consumer products. They discussed new product development and working from (and making modifications to) Hacker Dojo in Mountain View, CA.				Jen Costillo	products		
24: I'm a total fraud	Listener Jim Gf posed an interesting question about how to tell if you are a good embedded software engineer. Producer Christopher White joins Elecia to fail to give an answer. While they mention the embedded C test, they devolve into "why would you ask that question?", impostor syndrome, and methods for dealing with it.	*	*			imposter_syndrome		
23: Go for everything that I want	Jeri Ellsworth joins Elecia to talk about about co-founding Technical Illusions and their virtual and augmented reality product CastAR. Jeri gives an in-depth introduction to virtual reality, augmented reality and motion sickness. They also talk about hardware engineers working with software engineers, the CastAR's Kickstarter, children's toys, and tagging sharks for science.	*	*	*	Jeri Ellsworth	kickstarter vr		
22: Minecraft is the new Apple II	Jordan Hart from Digital Media Academy joined Elecia to discuss ways to make science, technology, and engineering fun for kids through Minecraft, Arduino robotics, and music.				Jordan Hart	education minecraft		
21: The tent is flat and everyone is wet	Rob Mitchell and Elecia discuss management, what they like about project schedules, and lessons learned on the path from engineer to manager.				Rob Mitchell	managing learning		
20: Soldered together by monkeys	Phil King of Weekend Engineering returned to give Elecia advice on how to fabricate a board, both in a professional capacity and for garage projects.				Phil King	boards		
19: Bacon and beer event	Karen Field and Elecia spoke about 2014 DesignWest, the embedded systems conference, and how to submit your idea for a session.				Karen Field	conference		

Episode	Description				Guest	Tags	Note	URL
18: Brine solids building up in strange places	Elecia White and Amy Button discuss Amy's dream of going to Mars, her previous role in training astronauts to handle disasters, and her current work on a magic box of rocks that will keep Orion's air breathable.				Amy Button	space mars		
17: Facebook status: maybe not dead	Elecia White spoke with Elizabeth Brenner about devices that can be used to help families worry less about grandparents who live alone (and 87-year-old neighbor friends named Dolores). Life Alert is the big name in senior push-button call systems.			*	Elizabeth Brenner	projects electric_imp are_you_ok	A promise that, in the future, it will be better	http://www.logicalelegance.c
16: Democracy is the worst form of government	Elecia tries to get a handle on whether Agile works with embedded software. Curtis Cole argues in favor of user stories, scrums, and story points.				Curtis Cole	agile engineering		
15: Robot on the front	Andreas Eieland from Atmel joined Elecia to talk about how the AVR processor line came to life, why there is an AVR in Arduino, and the spirit of making things.				Andreas Eieland	processors history		
14: Hot	Artist Kristin Anderson of Idle Creativity spoke with Elecia about the technology of working with slumped glass, getting started on Etsy (Elecia mentioned her craft electronic ideas), and moving from Silicon Valley technology to artistic pursuits				Kristin Anderson	art business		
13: Introspective nasal gazing	Christopher White emerges from his producer responsibilities to chat with Elecia about starting a podcast: the gadgetry, the software, the distribution, and, the big question, why we do it.					podcasts		
12: You have a Jedi sword	Dr. Edward White spoke with Elecia about how technology has changed medicine. He described gadgets used in surgery (harmonic scalpel!), how hospitals acquire tools, and why engineers should be focused on patient benefit.				Edward White	doctor surgery		
11: Tell me I'm wrong, it's fine	Karen Lightman joins Elecia White to talk about the infinite awesomeness of tiny MEMS devices. Recorded at the (somewhat noisy but lovely and delicious) Blue Brasserie during SEMICON West. Karen is the Executive Director of the MEMS Industry Group, the nonprofit trade association advancing MEMS across global markets.				Karen Lightman	mems sensors conference		
10: Hands off, baby	Jen Costillo joined Elecia White to discuss the secret parts of C, keywords that only embedded software engineers seem to know about. They talk about interviewing and why these keywords make good questions for finding folks who use the language to its full potential. On the show they mention a list of embedded interview questions with answers.			*	Jen Costillo	C keywords interviewing	Making Embedded Systems	http://www.amazon.com/gp/p
9: Kidnapped and blindfolded	Randi Eckstein grilled Elecia White on inertial sensors: when to use accelerometers vs. gyroscopes; gyroscopes vs. rate sensors; how to make an inertial measurement unit; the basics of quaternions and Kalman filters; what products need which sensors (and why).				Randi Eckstein	inertial sensors		
8: Studebaker Love Story	Elecia White is on vacation. Please enjoy some music from the Ballistic Cats!				Ballistic Cats	music		
7: Lights, camera, electrons	Josh Chan and Tarun Pondicherry, founders of Light Up, joined Elecia White to talk about how to teach electronics to elementary and middle school students.				Josh Chan Tarun Pondicherry	education startup kickstarter		
6: Do robot squirrels dream of electric imps...	Matt Haines of Electric Imp joined Elecia White to discuss how to connect cats (and other things) to the Internet.				Matt Haines	electric_imp projects		
5: Passion is contagious	Akkana Peck discussed her impending course: about an introduction to Arduino workshop for high school students. Arduino boards are a fantastic way to encourage people into embedded systems. The boards are cheap, the starter kits are great, there are lots of things you can do with them, and the compiler software is free.				Akkana Peck	education		
4: Are we not lawyers?	Elecia and Chris discuss why they chose to go into consulting and what they've learned while building Logical Elegance into the company it is.	*				consulting	Calculating Your Rate	https://docs.google.com/spre
3: Plenty of candy, no guns	Elecia White and Phil King of Weekend Engineering talk about things a hardware engineer wants software engineers to know. Drifting a bit from topic to topic, they touch on interviewing, oscilloscopes, ways to light hardware on fire, why they work on projects at home and writing novels.				Phil King	hw_v_sw projects		
2: My little pony stopped outputting	Elecia and Jen compared multimeters then install the Saleae Logic to debug a problem. Elecia pines for a nifty oscilloscope.				Jen Costillo	saleae dvm	Tools sometimes define the problem	http://www.logicalelegance.c
1: Start Tinkering	Elecia White, Jen Costillo, and Star Simpson talk about getting into garage tinkering. This show was recorded at DesignWest, the embedded systems conference.			*	Jen Costillo Star Simpson	conference live	Start Tinkering	http://www.logicalelegance.c