



# Apple 8-bit Class

For the first time in the history of VCF East, we will be offering classes throughout the entire event (Friday, Saturday, and Sunday). In honor of that, we will be setting up an entire classroom of Apple IIe computers allowing attendees to learn hands on Apple II topics ranging from absolute beginner to advanced.

These classes will be held in Room 2 (9059 - Classroom)

# Friday – April 22

TIME	TOPIC	LEVEL	INSTRUCTOR
9:00 am - 9:50 AM	Modern Solutions for Apple II	Beginner	Tony Bogan
10:00 AM - 10:50 AM	Intro to 6502 Assembly	Beginner	Adam Michlin
11:00 AM - 11:50 AM	Retrobrite 101	Intermediate	Javier Rivera
12:00 PM - 12:50 PM	FREE PLAY OF APPLE II GAMES	ALL	NONE
1:00 PM - 1:50 PM			
2:00 PM - 2:50 PM	Apple II Joystick Repair	Intermediate	Javier Rivera
3:00 PM - 3:50 PM			
4:00 PM - 4:50 PM	Advanced 6502 Assembly	Advanced	Stephen Edwards



# Saturday – April 23

TIME	TOPIC	LEVEL	INSTRUCTOR
9:00 AM - 9:50 AM	Apple II for Complete Beginners	Absolute Beginner	Tony Bogan
10:00 AM - 10:50 AM	AppleBASIC for Beginners	Beginner	Dean Notarnicola
11:00 AM - 11:50 AM	Intro to 6502 Assembly	Beginner	Adam Michlin
12:00 PM - 12:50 PM	FREE PLAY OF APPLE II GAMES	ALL	NONE
1:00 PM - 1:50 PM			
2:00 PM - 2:50 PM			
3:00 PM - 3:50 PM	Advanced 6502 Assembly	Advanced	Stephen Edwards
4:00 PM - 4:50 PM	Retrobrite 101	Intermediate	Javier Rivera

# Sunday – April 24

TIME	TOPIC	LEVEL	INSTRUCTOR
10:30 AM - 11:20 AM	Apple II for Complete Beginners	Absolute Beginner	Tony Bogan
11:30 AM - 12:20 AM	Modern Solutions for Apple II	Beginner	Tony Bogan
12:00 PM - 12:50 AM	Intro to 6502 Assembly	Beginner	Adam Michlin
12:00 PM - 12:50 PM	FREE PLAY OF APPLE II GAMES	ALL	NONE

#### 8:00 am

Doors open

#### 8:30 am - 9:30 am

Developing 8-bit Commodore programs using a modern IDE – Byron Stout

While you can still program directly on the original hardware, it sure is nice to have the conveniences of a development environment running on a modern PC. Let's use CBM PRG Studio to write BASIC and ML programs for Commodore machines. In addition to getting up and running, we will also talk about the built in character, sprite, and screen editors that help bridge the gap between your PC and real or emulated 8-bit hardware.

#### 9:45 am - 10:45 am

Amiga 4091 SCSI Host Controller Reverse Engineering – Stefan Reinauer The Amiga A4091 is one of only two Zorro III SCSI controllers that was ever developed. Last fall, Chris Hooper and Stefan Reinauer started reverse engineering one of its rare specimen that was found in a lonely, forgotten eBay auction. Four months later, we have a working version of the "ReAmiga 4091". The class shows the result, and talks about some highlights and lowlights of development.

#### 11:00 am - 12:00 pm

Apple ][ programming – Burger Becky Burger Becky will show you tips and tricks on how to program your Apple ][.

#### 12:15 pm - 1:45 pm

Commodore VIC and VIC II chips – Bil Herd, Albert Charpentier, Stephen Edwards Albert Charpentier and Bil Herd will go into the technical details of the VIC and VIC-II microchips with Stephen Edwards moderating. Al was one of the creator of the Commodore VIC and Vic-II chips. Bil Herd gained detailed knowledge of the VIC-II chip while creating on the Commodore 128. Stephen Edwards is a computer science professor at Columbia University.

#### 2:00 pm - 3:30 pm

Commodore Amiga chips – Dave Haynie, Andy Finkel, Stephen Edwards Dave Haynie and Andy Finkel will go into details of the Paula, Denise and Agnus Amiga microchips with Stephen Edwards. Dave Haynie was the hardware engineer for the Amiga 1200,



2000, 3000, 4000. Andy Finkel was the software engineer for the Amigas. Stephen Edwards is a computer science professor at Columbia University.

#### 3:45 pm - 4:45 pm

Writing an emulator – Mike McGann
An overview of the steps necessary
to write a rudimentary emulator.
Topics include: address/data bus
management, memory mapping, basic
run loop, CPU opcode implementation,
functional addressing modes, testing/
debugging, video display, and user input
using SDL. Examples presented will
draw upon my experience on writing
an emulator for the Commodore 64
an an emulator for a Pac-Man arcade
cabinet. Code can be found here:

https://github.com/blackchip-org/retrocs, and I gave a presentation on this topic at MAGFest 2020 which can be found here: https://www.youtube.com/watch?v=k00rGXFiIA8

#### 5:00 pm - 6:00 pm

# **Commodore 128 Reverse Engineering** – *Johan Grip*

Johan will about the Commodore 128 PCB and some of the custom chip reverse engineering that he's been doing.

#### 6:15 pm - 7:15 pm

**How the VICKY II works** – *Stefany Allaire* (*Virtual*)

#### 5:00

Doors close

	CDL Makerspace (Building 9059)	Consignment - 9010-C
9:00 AM - 5:00 PM	Glitch Works Kits (Right Door)  • XT-IDE rev 4A kits  • R6501Q SBC kits  • RAM expansion for R6501Q kits  • 8085 SBC rev 3 kits  • CF adapter boards (works with both R6501Q and 8085 SBC rev 3, but really for the 8085 SBC)  • 8255 parallel I/O and prototyping interfaces  • Blank prototyping cards  Apple 2 Classroom (Left Door)  Learn to program your Apple 2	CONSIGNMENT is in 9010-C (the cafeteria down the hall from the talks)  The consignment area allows people to buy and sell vintage computer related items during our VCF shows.

# **Saturday**

#### 8:00 am

Doors open - Exhibits open

#### 9:00 am - 5:00 pm

Glitch Works Kits - Room 1, CDL 9059 Apple 2 Classes - Room 2, CDL 9059 Consignment - 9010-C

#### 9:00 AM - 10:00 am

**Quantel Paintbox** – Adrian Wilson (virtual) Wilson will guide us over zoom through the Paintbox's fantastic but unknown history, its technical and creative background, plus the plans for the future.

#### 10:00 am - 11:00 am

Working for Commodore, Atari, Commodore Microcomputer magazine, Power/Play magazine – Neil Harris One of the VIC-20 Commandos who worked on the highly successful marketing of the Commodore VIC-20. He will tell stories from his time. at Commodore as well as Atari. Commodore Microcomputer magazine and Power/Play Magazine.

#### 11:30 am - 12:30 pm

Lunch break

#### 12:30 pm - 2:30 pm

Remembering their days at Commodore - Commodore employees: Bil Herd,

Dave Haynie, Andy Finkel, Neil Harris, Benny Pruden, Bob Russell, Joe Myshko

1:00 pm - 3:00 pm

Univac 1219 Demo - VCF Museum

2:30 pm - 3:00 pm

Commodore 64's 40th Birthday Party!

3:30 pm - 4:30 pm

**Origins of Logo** – *Cynthia Solomon (Virtual)* A computer scientist and co-inventor of LOGO, she is known for her work on artificial intelligence, and popularizing computer science and educational computing for students. She worked with Donald Ervin Knuth, Wally Feurzeig and Seymour Papert. In the late 60's she helped to create and promote LOGO to help inspire children to learn computer programming through a userfriendly programming language. Some of us remember programming the turtle graphics found in LOGO in elementary, middle school or high school back in the 1980's and 1990's

#### 4:45 pm - 5:45 pm

#### The C256 Foenix Gen X

- Stefany Allaire (Virtual)

Stefany Allaire will go into detail about this new computer system which has a Dual CPU system with a 65C816 System + an Edge Connector where you can add a module with a second CPU.

# **Sunday**

9:00 am

Doors open

#### 9:00 am - 5:00 pm

Glitch Works Kits – Room 1, CDL 9059 Consignment – 9010-C

10:00 am

Exhibits open

#### 10:00 am - 11:15 am

### History of the ENIAC programmers

– Kathy Kleiman

A pioneering attorney, programmer and data security auditor, is a historian of the ENIAC programmers. She cofounded ICANN's Noncommercial Users Constituency in 1998. As an attorney she founded one of the first Internet Law practices. After attending ENIAC's 40th anniversary and meeting the ENIAC programmers, Kleiman felt compelled to tell the untold story of the six women who programmed ENIAC, the first all-electronic, programmable computer; thus, she founded the ENIAC Programmers Project. She will be showing part of the documentary created about these women.

#### 10:30 am - 1:00 pm

Apple 2 Classes - Room 2, CDL 9059

#### 12:00 pm - 1:00 pm

#### Lasertrak Flight Planning System

- Bonnie Norman (Virtual)

Will tell us about the Lasertrak Flight Planning system which provided CDs of data for flight navigation in U.S. military jets. Lasertrak was a box containing a printer & a CD-ROM drive and was one of the first CD-ROM databases, updated monthly with navigation data. Part of her story will be about famous people that she knew including Evi Nemeth, John Atanasoff IV, and Donald Ervin Knuth.

#### 1:00 pm - 3:00 pm

Univac 1219 Demo - VCF Museum

#### 1:15 pm - 2:15 pm

#### Editor at RUN magazine, Tutoring Center on Q-link, GEnie, Delphi, CompuServe, AppleLink, AOL, PCLink

- Margaret Morabito (Virtual)

Recently wrote a book with Bil Herd called "Back Into the Storm". She also published a book on using the Commodore 128 called "Vintage Commodore 128 Personal Computer Handbook: 2019 Survival Edition". Years ago, she was editor of RUN magazine, and she also designed and ran the Tutoring Center and the Q-Link Community College, as well as the Parent-Teacher Information Exchange. She later also ran the school on GEnie, Delphi, CompuServe, AppleLink, AOL, PCLink.

#### 2:30 pm - 4:00 pm

History of video game programming from Atari 2600 to now – Burger Becky
Burger Becky (Rebecca Heineman) was the first video game champion of Space Invaders in 1980. As lead programmer she created the games Wasteland, The Bard's Tale, Out of This World, and the Mac OS and 3DO ports of Wolfenstein 3D. She was a founding member of video game companies Interplay Productions, Logicware, Contraband Entertainment, and Olde Sküül. She has been chief executive officer for Olde Sküül since 2013. You will find out how she got the nickname "Burger Becky".

#### 4:00 pm

Exhibits close - Doors close

# Exhibitors

VCF exhibitors put amazing effort into displaying their favorite historic computing systems. Be sure to visit them all, ask questions, play, learn, Tweet, and take lots of pictures! Perhaps you'll be inspired to exhibit your own pride-and-joy at VCF East 2023 next year.

#### Compaq Portable

Ryan Burke

The 4 major revisions of the Compag portable.

#### Making Tandy work for you

Adam Brisebois

A selection of Tandy computers from early to late, connected via serial or dial-up to a Linux server, allowing them to be used for modern work. Browse the internet, visit a BBS, print a document, on computers from the 70s to 90s.

#### Japanese PC Gaming: Late 80s-Early 90s

Lawrence Costella

In the late 1980s and early 1990s, the MSX2 and PC-98 derivatives were the most popular choice of personal computers for Japanese consumers. Both had their own unique hardware and software that were not compatible with PCs outside of Japan. The most popular games of the time were visual novels and shoot em ups. This exhibit will feature a PC-9821 running DOS/V from a CF card, an MSX2 in its original configuration, and an MSX2 running a custom Flash Cart that functions as an OS and a hard drive. Each computer will be running a variety of games such as Touhou 1-5, Aleste 1-2, Space Manbow, and perhaps a few all-ages Visual Novels.

#### The European Clone Invasion

Johan Grip

Johan Grip will show off his Commodore

128 PCB as well VIC-20, C64, C128 and MacSE clone boards to show. Maybe even a Mac SE/30.

#### Commodore Reborn

Stephen Mayo, Elizabeth Mayo
Experience recently created games and demos on modern reproductions and recreations of classic Commodore systems. Exhibit will include VIC-2020, C64 Reloaded, C64 Ultimate, and Amiga Vampire alongside original systems as a point of comparison.

## Unique and Upgraded Vintage Apple Computers

Steven Matarazzo

We'll be showing off some unique Apples as part of the "computers for the masses" subject. Some of these machines are rare clones, prototypes, or heavily-upgraded specimens that some people have never seen. Others are classic designs and products that many of us grew up using or had in our homes. These machines will be hands-on so people can experience what it was like using these computers back in the day! We're showing that these old machines still have a lot of life left in them!

#### S-100 Revue

Mike Loewen

Before the IBM PC's ISA bus, there was the S-100 bus. Originating with the Altair bus on the Altair 8800, it evolved to the S-100 bus, then the S-100 IEEE-696 bus. With a

multitude of boards available from over 100 manufacturers, it offered a great deal of flexibility for systems for hobbyists, business and industry. Early systems were based on 8080, Z80 and 8085 CPUs, with 8088 and 8086 processors coming later. CP/M was probably the most common OS for these machines. On display will be several iconic S-100 systems, including an IMSAI 8080, Sol 20, and a Vector Graphic Vector 1.

#### Behind the Screens

Jesse Cardone

Our team is back with more reverse engineered shenanigans of obscure cable headend systems. The Weather Stars. developed by The Weather Channel, return to VCF East again, as well as new additions from Prevue Networks (later TV Guide). The Atari-powered EPG Jr and an Amiga-based Prevue Channel systems make their first-time appearance this year. The Weather Channel launched their TV network in 1982 with their newly developed WeatherSTAR system. These were specialized computer systems installed in television cable headends across the country, allowing viewers to get their local weather information, receive lifesaving alerts, and by extension, listen to that catchy smooth jazz. Early machines were custom designed 8-bit computers increasing in complexity with every generation, eventually moving to an SGI based system, then Pentium 4 and beyond. The United Video Satellite Group (UVSG) launched the Electronic Program Guide, the precursor to the Prevue Guide, in 1981. It provided a channel that allowed viewers to see the TV schedule, including current and upcoming programs for each channel in their cable system. In order to produce the channel, each cable headend installed a computer that received a data feed over satellite and generated video output in real-time to form the channel. In 1988, the channel evolved into the Prevue Guide, taking advantage of the unique genlock capability of the Amiga to incorporate video previews of upcoming shows, movies, and pay-per-view events.

#### Weird Macs and Extreme Resurrections

Michael Stroz

We will have a shared exhibit of some unusual Macs including a Powermac 6500 with every possible upgrade, a medical Quadra 650 in a custom case, and iMac with a voodoo card, a Mac clone or two, etc.

The other part of the exhibit will be a small demonstration of resurecting very neglected computers. There will be a formerly mouse infested Apple III, a Mac SE that was left outside for a year, a Mac SE that has been buried in the ground for 6 months, and a Mac Classic that had been left in a dirty warehouse since new. CJ will be attempting to get these working again at the show.

#### PDP-8 Spacewar and other graphics

David Gesswein

PDP-8/I with AX08 ADC and point plot demoing spacewar and other graphics and signal processing.

#### Nova 1200: Data General's Low Cost Minicomputer

Alexander 'Z' Pierson

Meet Data General's third minicomputer: the Nova 1200. Released in 1970, the Nova 1200 embraced the new 74181 single chip ALU to reduce cost and complexity, allowing the machine to fit the entire CPU on one circuit board. Come try the Nova for yourself in Single User BASIC, marvel at the massive circuit boards that make it tick, or watch the beautiful blinkenlights on the front panel.

#### Fast from the past - Recreating the Amiga 4091 SCSI Host Controller

Stefan Reinauer

The Amiga A4091 is one of only two Zorro III SCSI controllers that was ever developed. Last fall, Chris Hooper and Stefan Reinauer started reverse engineering one of its rare specimen that was found in a lonely, forgotten eBay auction. Four months later, we have a working version of the "ReAmiga 4091". The exhibition shows the result, and some highlights and lowlights of development.

#### Dial 1 for IT

Jason Perkins

Comdial PBX, Interchange Voicemail, Vintage Answering machines. See what is going on in the back end with those horrible phone trees. Call in at (732) 456-5010.

## To be announced rare computer!!! - System Source Museum machine

Robert Roswell, Ryan Burke, museum staff A very rare machine to be announced shortly.

(Continued...)

# Exhibitors, continued...

#### Core Memory Interactive Core64

Andy Geppert

Want to build and interact with your own Core Memory? This is the kit for you. With this kit you get to weave 64 bits of core memory and bring it to life with a magnetic stylus and a matrix of 64 RGB LEDs aligned behind the 64 cores.

#### TeleVideo - Networked CP/M

Patrick Finnegan

TeleVideo made CP/M based systems in the early 80s that booted off a network server. I will be displaying a couple of models of their system booted off of a modern replacement file server that was built from reverse engineering their system.

#### Foenix Retro Systems

Michael Weitman (surrogate for Stefany Allaire) Calling all retro-enthusiasts to meet the newest Foenix systems including the Motorola 68040V-based A2560K system (announced @ VCF East this past October) and the soonto-be-released dual-CPU capable C256 Gen-X. Foenix Systems is supported by a growing community of developers, users, and makers from across the globe. All Foenix machines feature Stefany's penchant for classic chiptune ICs, custom FPGA based tile/sprite multimode graphics and plenty of I/O. Whether you are rekindling retro from the 80's and 90's or new to the scene, there is something for you. Three systems, including the WDC 65C816 based C256U+ will there to play with.

#### Speech Synthesis on 8-bit computers

Eric Rangell

Explore early speech synthesizer hardware and software from the 1980s on the Apple II and TI 99/4a. Exhibits will include SAM (Software Automated Mouth), the Echo ||b, the Mockingboard speech chip, and software that uses the speech module for the TI 99/4a. Listen to demos of each program and make them say your own phrases.

#### Remembering the ENIAC

Brian Stuart

The ENIAC was an extremely influential system. Many of the women and men who built it and programmed it went on to play important roles in early computing. This exhibit includes scale models of the ENIAC accompanied by multiple simulations of the machine. Visitors are invited to come an carry

out a computation on the simulated ENIAC.

#### Modern TRS-80 Game Development

Pete Cetinski, Alexander Cetinski

TRS-80 Model I computer with several games Pete has developed using modern toolchains. The games are RoundUp! and Breakdown. He will also show the development tools used on a modern MacBook Pro and offer ideas on how to develop your own modern TRS-80 games.

#### Venerable DEC PDP11/03

Douglas Taylor

"Sturdy, reliable and flexible, the PDP11/03 was a mainstay in industrial and research automation environments in the 1980's. This base model could address 64KB of memory and could be configured with a wide variety of peripherals. This RAM limitation was lifted when more advanced models of the DEC Qbus PDP11's were released. A working PDP11/03 is exhibited that has been configured to boot from modern disk emulators."

#### Vintage Handheld Computers

Dave Shevett

A collection of mobile computing starting with the first programmable calculators up through the smartphone revolution.

#### DECMate III - A lunch box sized PDP-8

Stephen Jones

The concept of the original DECmate (1977) was reintroduced as part of Digital Equipment Corp's Personal Computer Challenge project in 1980. It is one of 3 models offered as DEC's strategy to compete in the personal computer market. This exhibit features the DECmate III (1984) running both CP/M Z80 and OS/278 6120 modes as well as a terminal mode allowing the DECmate to access remote systems.

#### A History of Early Apple Computer Logos

Bruno Marchon

This exhibit will focus on the genesis of some of Apple's iconic designs, namely the rainbow Apple, and the Macintosh "Picasso" artwork. It will also discuss some designs that did not make it to the general public, such as Folon's "Mr Mac" and the "Spirit of Macintosh". Some of the exhibitors collection pieces will be on display.

#### **Euro-Computer**

Thierry Mazzoleni, Jérémy Marsin Machines with weird keyboard layouts, speaking fluently RGB and eating high voltage for breakfast.

#### **RR Auction Rare artifacts!**

Jon Siefken, Bobby Eaton An Original Enigma Machine and Early Apple Item(s). Other items TBD!

#### Commodore 1982

Ethan Dicks

1982 was a big year for Commodore. The biggest news was the announcement and release of the Commodore 64, but it wasn't the only machine they had. There were several models of PET available, and the VIC-20. This is a slice of what you could get from Commodore all in the that same year.

#### Selectric

William Donzelli Selectric terminals that are not 2741s. Variants and weirdos.

# Game Development, the computer and the console

Thomas Andrews

The primary focus will be various ways of using a computer to do game development. This will not be "here's unity" but focusing on Dreamcast, PS1, Xbox 360, PS3 eras. It will use the software and toolchains they would have used. It will feature a very rare piece of gamecube development hardware as one of the main features. There will be rotating demos of hardware to keep the presentation fresh throughout. We are actively hoping to get in touch with a developer to create some form of demo that's more than something provided by the SDKs as well.

#### A Tale of Two Apples

Dan FitzGerald

A demonstration of an Apple II Plus, an Apple Macintosh 512Ke, and an Apple ImageWriter II dot matrix printer, along with a description about the work that was done to restore those systems. For the Macintosh, a description of what I learned about working with the internal CRT and recapping parts of the board. For the Apple II Plus, I will talk about the condition the machine was found in, my first exploding RIFA, fixing the Disk II drive, my search for a CRT, and making working boot disk images from scratch. Both computers and the printer will be available for use by the general public.

#### "You can take it with you": Meeting the IBM PC Portable (5155)

Dan FitzGerald

This will be an IBM PC Portable (5155) connected to an IBM PC Graphics Printer

(Epson MX-80). The exhibit will discuss the capabilities and history of the machine, the condition in which I found the machine, how I learned how to solder and solder my first PCB, and how the XT-IDE can be used to give this machine a 2GB solid state hard drive. This exhibit will be available as a continuous live demo, and people can use the software and the printer.

#### Early PowerPC

Connor Krukosky and Ian Primus
Power Series IBM desktop running OS/2
Warp. All things PowerPC including the
desktop, PowerPC based ThinkPad, various
PowerPC macs, and other assorted PowerPC
goodness. Also a BeBox will be on display.

#### Pimp Your Amiga

Amiga Bill

The Amiga community is thriving and there are numerous new modifications you can do to your Commodore Amiga computer. AmigaBill will demonstrate new cases, key caps, mechanical keyboard, SD card floppy drive replacement, the BiFrost LED project, the Solas LED project, TF1260 card, PiMiga 2.0 and more!

## **Vendors**

Check out these commercial vendors who will be selling their products on the show floor.

#### Jeff's Vintage Electronics

S100 boards, 8 bit trainers, Apple ][ parts, computer terminals, electronic components, miscellaneous vintage computer parts.

Tucson, AZ

E-mail: jeffs.vintage.electronics@gmail.com

#### Francis Bernier

Commodore 64 related accessories. Website: http://3dpxl.com/

#### Eli Tomlinson

Vintage computer software – C64, Amiga, Apple II, DOS. Website: https://elisoftware.org/

#### RETRO Innovations - Jim Brain

Contemporary Components for Classic Computers: Commodore, TI, TRS-80, and more. Website: https://go4retro.com/

#### Johan Grip

C128 Neo - Website: https://c128.se/

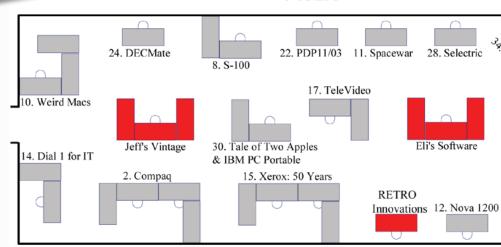
# Campus Monmouth Bivd

VCF Museum **Building 9036A** (exhibitor parking)

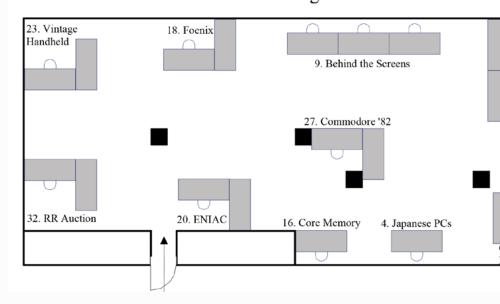


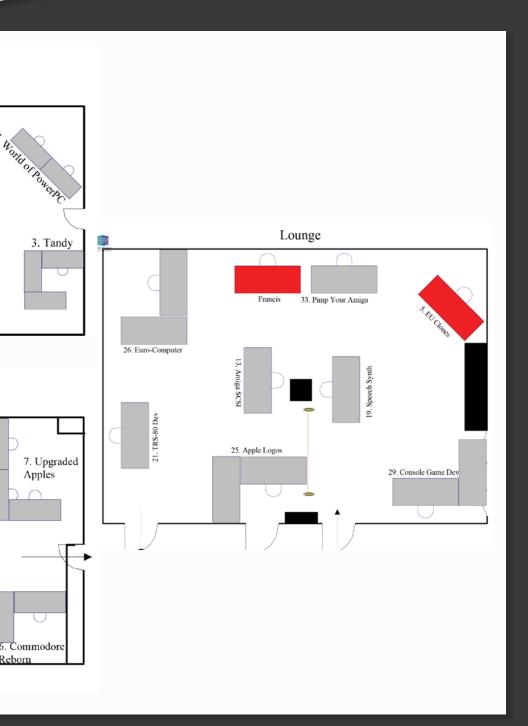
# Exhibits Map

#### 9032A



### Dining Room







# Hello, world!

Welcome to the Vintage Computer Festival East 2022. You're about to embark on a fantastic family-friendly adventure backward in time.

You will see and touch dozens of historic computers from many decades gone — everything from big iron to eight-bitters. You'll also experience some creative new replicas, modern enhancements, and new retrothemed systems. You will meet some historic people, learn their insider stories, and perhaps pick up our nerdily awesome t-shirt! While you're here, remember to tour the amazing museum all around us: they're a terrific host and worth a return trip. Be sure to talk about us online: #vcfeast

Happy computing,

- The Vintage Computer Federation

Vintage Computer Federation Inc. (vcfed.org) is a 501(c)3 non-profit organization for and by computer history enthusiasts. We evolved in 2015 from the DNA of related groups.

In addition to Vintage Computer Festival East, we also own VCF West, held in California each summer, and we are working hard on creating more events.

We're big fans of online collaboration. We own Vintage Computer Forum, which is the hobby's largest discussion site. There are thousands of users worldwide to help you with whatever niche of vintage computing you prefer.

We also support in-person meetups through regional chapters. We are actively incubating new chapters and partnering with existing local groups to join the Federation.