

## KansasFest 2022 Schedule

Thu Jul 21, 2022

**7:30am - 8:30am Breakfast in Cafeteria**

**9am - 9:15am KansasFest Welcome**

Introduction of committee members; tips and tricks for having two fantastic days.

**9:15am - 11:15am Robert Woodhead Keynote**

Robert Woodhead Keynote

**11:15am - 11:30am Coffee Break**

**11:30am - 12pm Vendor Product Announcements**

Mark Lemmert of 6502 Workshop, Javier Rivera, Joe Strosnider, and Ken Gagne of Juiced.GS

**12pm - 1:30pm Lunch**

**12:15pm - 1:15pm Lunch in Cafeteria**

**1:30pm - 2:30pm Robert Woodhead Chat Session (Zoom)**

Join Robert Woodhead on Zoom for an informal chat.

**2:30pm - 2:45pm Coffee Break**

**2:45pm - 3:30pm Inside A2Stream**

Wondering how on earth A2Stream manages to stream music from the internet in that quality without any dedicated sound chip? The program author Oliver Schmidt will explain it all. No assembly language knowledge required, promised!

**3:30pm - 3:45pm Coffee Break**

**3:45pm - 4:15pm Appleworks on the Apple II+ - Yes it is possible!**

Over the last two years, Petar Puskarich has worked to figure out how to get Appleworks to function on the Apple II+. This was something that normally couldn't be done back in the day until a company released the PlusWorks packages. Petar found out about them late in history and compiled a lot of information on how to modify the various versions of Appleworks available with the various required versions of PlusWorks as well as the caveats and limitations this process demanded. This session will also cover a few different memory card options and what can give you the maximum desktop size on this specific machine.

**4:15pm - 4:45pm Special Delivery Software**

Between late 1980 and late 1982, Apple marketed a set of third-party software under the banner "Special Delivery Software." A kind of proto-App-store. Paul Hagstrom will walk through some of what is known or deduced about this early history of Apple II software, reviewing catalogs and marketing, obscure and/or interesting titles, copy protection, and other related topics.

**4:45pm - 5pm Apple II on iOS in 2022**

Emulating an Apple II on a modern computer using MAME or AppleWin is a popular option, but what if you wanted to take it everywhere you go on your iPhone? Why would anyone want to do that, you ask? Why not! Yoshi Sugawara looks at the current landscape of Apple II emulators for iOS, how you install them, and then dive in to using MAME4iOS, a port of MAME for the latest iOS devices. We'll see how we can experience our favorite Apple II programs from more than 30 years ago on much later generation Apple computers called "iPhones" and "iPads" in 2022. <https://github.com/yoshisuga/MAME4iOS>

**5:30pm - 6:30pm Dinner in Cafeteria**

**7:30pm - 9:30pm Banter from the Bench (Zoom)**

Join Joe Strosnider from his Apple II workbench as he chats with remote attendees about his approach to life, the universe, and Apple II computer repair.

Fri Jul 22, 2022

**7:30am - 8:30am Breakfast in Cafeteria**

**9:15am - 9:30am Creating Vector Games Using Accelerated Apple Logo**

Emulation allows for greater utility in classic Apple II applications, in this case Apple Logo. Given that we can accelerate execution speed, just exactly what can we get out of Apple Logo? How about classic vector arcade games? Tune in to Melody and April Ayres-Griffiths' talk to find out more!

**9:30am - 10am Animation of Bard's Tale & Dragon Wars**

Animating a monster or character and making it seem non-repetitive was a requirement for making Bard's Tale and Dragon Wars stand out from all the other games of the time. But how? When everyone else did a set of frames for motion that eventually repeated, the idea that as many as 4 independent animations could run at the same time with their own timing fixed the issue. Rebecca Heineman will explain in this session how it was done, what limitations were imposed on the artists, and how it made the creature animations unique in the role playing game genre of the Apple II and IIGs.

**10am - 10:15am Coffee Break**

**10:15am - 11am Apple II audio from the ground up**

Pulse Width Modulation is the gold standard technique for Apple II speaker audio. But can we do better? Kris Kennaway will present a technical deep dive into how the Apple II speaker works. Starting from first principles, he'll show how we can simulate the audio output in software. Together with an Ethernet audio player that allows controlling the speaker movement with cycle level precision, this allows us to use modern computing power to optimize the resulting audio quality when played on the Apple II. Apple II speaker audio like you've never heard it before!

**11am - 11:15am Coffee Break**

**11:15am - 12pm The 6502 Story - Yesterday, Today and Tomorrow**

Presented by Bill Mensch and Stephen Edwards: As one of the design engineers and patent holder of the MOS Technology NMOS 6502 and WDC W65C02S and W65C816S microprocessor family of chips, SBC (single board controller) boards, software tools, MPW Tapeout Classes and IP (licensing over 60 companies worldwide), my talk will tell the story of the past, present and future of the 6502 technology. WDC enjoys enabling others to use the 6502 technology such as Chuck Peddle, Steve Wozniak, Nolan Bushnell, Steve Furber, Sophie Wilson, Ben Eater, PragmatIC Semiconductor, Siemens Pacemakers and many others over the last 44 years. The Apple II is my favorite home/personal computer of all time. Apple is the only company that has used in the production of their computers all of my microprocessor designs. The Mac also used my W65C22S for the original mouse interface. I will explain our intentions for The 6502 School, The 6502 Museum and I will present the latest "plastic TFT 6502 for smart-labels".

**12pm - 1:30pm Lunch**

**12:15pm - 1:15pm Lunch in Cafeteria**

**1:30pm - 2pm Playing music on the GS with NinjaTrackerPlus (NTP)**

The Apple IIGS has a remarkable sound chip. In his talk, Jesse Blue explains what tricks NinjaTrackerPlus (NTP) uses to make it play module (MOD) music files. If you're a musician with the goal of making music for the IIGS, a programmer looking to add music to your project or want to know more about GS sound, then this talk is for you.

**2pm - 2:30pm A2: A Programming Language for the Apple II**

A2 is a new programming language for the Apple II designed by Taeber Rapczak. This session will give an introduction to the language, discuss the motivations for creating it, and highlight some challenges during the development of the compiler. The MIT-licensed, source code is available at <https://github.com/taeber/a2lang>.

**2:30pm - 2:45pm Coffee Break**

**2:45pm - 3pm Apple2Idiot Card: Using dual port ram to simplify ESP32 IOT card development**

The challenges of developing an expansion slot card by a complete Apple II newbie, and overcoming hardware timing limitations using dual port memory. Nathan Hendler (Equant) will describe hurdles encountered, as well as the Linux based development tool-chain used in developing a ESP32 internet-of-things expansion board for the Apple II.

**3pm - 3:15pm Arduino Due Adventures: Apple 1 and Don Lancaster's Serial Terminal**

Matteo Trevisan: Do you remember Kansasfest 2020??? I was an attendee with the Apple 1 raspberry pi. Now is 2022 and

as Moore's law wants and also Woz the computer become more and more little every 6 months. This is not completely my project but a project over my research on the net (simple emulator by Mike Chambers) to run the Apple 1 code inside Arduino. After some reading and testing and try on code programming and buy hardware. I have a functional Apple 1 emulator inside an Arduino Due running also the game LIFE from Conway and some other programs other than Basic. I'm here to present an ancestor replica of the first personal computer: the Don Lancaster Serial Terminal TVT II - CT- 1024 Terminal born in 1973. It had a great success from the publications in the magazines sold for 2\$ at that time! This is a replica of the Terminal built over a miniaturized breadboard tvout circuit for Arduino found on the Arduino website and the ntsserialtcout sketch code for Arduino Uno. Everything built by hand with minimal stuff, there is only a difference in the quantity of words that can be written that are more than the original Terminal. Everything works typing from a pc keyboard via Serial Terminal Teraterm connected to the serial usb port in com5 at 57600 baud and output the video in the RCA video output of your television. I think this was the first invention to revolutionize the personal computer world following we have the Altair 8800 and Apple 1 computers that used this tv out system.

### **3:15pm - 3:45pm Exhibiting Art Projects on the Apple II**

Lucia Grossberger Morales will describe exhibiting her Apple II software, images, and prints in galleries and museums and collaborating with Bob Bishop to exhibit at ACM SIGGRAPH (Special Interest Group in Graphics.) Thanks to Mark Pilgrim and Chris Torrence, LGM will show some of the treasures she found on her 100 Apple II floppy disks after forty years! LGM will premier her new Limited Edition Apple II prints and describe her process in selecting the works.

### **3:45pm - 4pm Coffee Break**

### **4pm - 4:30pm FujiNet for Apple II's - status and plans**

Jeffrey Piepmeier and Petar Puskarich will discuss and demo the FujiNet for Apple II. The FujiNet is a multi-peripheral device emulator and modern wireless network adapter for vintage computers. FujiNet origins, booting an Apple II+ over the internet for the first time, hardware and software development, current status and plans will be discussed. FujiNet firmware includes disk, printer, and network devices. Disk images are selected and mounted via the CONFIG program run on the 8-bit host and device configuration is made in a web browser. Network protocol adapters set the FujiNet apart from other networking solutions. Protocol processing (e.g., HTTP, FTP, etc.) is performed on the FujiNet and presented over simple open/close/read/write interface to the 8-bit host. The Apple II version currently supports block devices over the SmartPort bus and Disk II emulation is planned. Successes and challenges encountered during development will be discussed along with plans and future ideas.

### **4:30pm - 5pm Creating a head to head action game using VidHD text modes**

Jay Craft will demonstrate Xslinger HD, a player vs. player retro-styled action game, that uses the VidHD card's extended text modes as if they were a new graphics mode for the Apple II. The presentation will include a description of the text modes and how to use them as well as challenges and discoveries made while creating a game that features them. The session will also discuss the overall experience as a newcomer to assembly language and game programming.

### **5:30pm - 6:30pm Pizza Banquet in Basement**

**Where:** Corcoran Hall Basement

### **6pm - 6:15pm Tie and door contest judging (Corcoran)**

Vote for your favorites among the submissions in the tie contest and door contests.

### **6:30pm - 6:45pm Apple II Forever awards**

### **6:45pm - 7:15pm Lo-res art contest judging (Zoom)**

Vote for your favorites among the submissions to the lo-res art contest.

### **7:30pm - 8:30pm Lode Runner level tournament (Zoom)**

Judges play levels submitted to the Lode Runner level contest, both to win and to rank the level submissions.

**Sat Jul 23, 2022**

### **7:30am - 8:30am Breakfast in Cafeteria**

### **9am - 9:30am Mechanical Keyswitches: Dreaming of the Blue Alps**

The focus will be on ALPS keyswitches: 16 distinct variations plus 9 "clones," 25 versions in all. Keyswitches vary on three

dimensions: CLICKINESS / TACTILITY / LINEARITY. Stephen Buggie will circulate among attendees two "GRAND KEYBOARDS" populated with all the ALPS variations. Customizing the keyboard with many varied ALPS keyswitches will be discussed.

### **9:30am - 10am A.P.P.L.E.'s Blast From the Past**

Join Brian Wiser and Bill Martens for highlights of new A.P.P.L.E. software and books that we've produced this year and are introducing at KansasFest, along with some special announcements and surprises! As the oldest user group from 1978, we've created a variety of Web sites (likeMECC, Beagle Bros, Applied Engineering, Apple Archives), over 40 previous books, dozens of programs, and a PDF magazine that's usually 50+ pages. Recently released books include the remastered "Peeking at Call-A.P.P.L.E." magazine 1978, 1979 and 1980, and the 2nd revision of "What's Where in the Apple: Enhanced Edition." Stay tuned for more Penguin source code and other delights!

### **10am - 10:15am Coffee Break**

### **10:15am - 11am Writing an Apple /// arcade game**

The Apple /// does not have much by way of games, but not because it lacked the power. Mostly, it lacked an audience. In this talk, Paul Hagstrom walks us through an attempt to create an arcade game in assembly language using some of the specific capabilities that the Apple /// provides. Whether the game is ultimately fun or not, the journey should prove to be interesting.

### **11am - 11:15am Coffee Break**

### **11:15am - 12pm Remembering Tony Diaz**

Tony Diaz passed away unexpectedly on October 27, 2021. Tony was a core organizer of KansasFest for many, many years, and was instrumental in transitioning the event from Avila University to Rockhurst University in 2006. He helped keep it going through the lean years and facilitated its rebirth into the vibrant gathering it remains today. His tremendous knowledge of the Apple II and unequalled collection of Apple II artifacts, many of which he brought to KFest over the years, will be sorely missed. Join your fellow KansasFest attendees as they share their memories of Tony over the years.

### **12pm - 1:30pm Lunch**

### **12:15pm - 1:15pm Lunch in Cafeteria**

### **1:30pm - 2pm GTE: A graphic engine for the IIgs**

Lucas Scharenbroich will present an overview of the Generic Tile Engine (GTE) project for the IIgs. GTE is a tile-based graphics engine that, among other features, supports fast full-screen, multi-plane parallax scrolling. The session will discuss the design goals of the project, provide technical implementation details and showcase a suite of demos to demonstrate the engine's capabilities.

### **2pm - 2:30pm Mega IIe - Building a IIe-compatible with the Mega-II chip (from the IIGS)**

Inside of the Apple IIGS is the Mega-II ASIC. This 84-pin PLCC is called an "Apple IIe-on-a-chip." After learning about it, James Lewis, also known as the Bald Engineer, decided to see if it could function as an Apple IIe-compatible computer--when removed from the IIGS. In this hardware-focused session, he explains the almost two-year project. Highlights include: how the Mega-II differs from the Apple IIe, how little its capabilities are used by the IIGS, and a brief look at a (potential) bug in its decode logic. Spoiler: There is a demo of the Mega IIe computer booting and running IIe software!

### **2:30pm - 2:45pm Coffee Break**

### **2:45pm - 3:15pm Super Hi-Res graphics**

Last year at KansasFest, Kris Kennaway described how Double Hi-Res graphics works, and presented a tool ([[-Pix) for converting images to Double Hi-Res format for display on an Apple II. This year he turns his attention to Super Hi-Res. This Apple //gs display mode supports 320x200 resolution with 256 colours from a palette of 4096, however these colours are heavily constrained in how they may be used on the screen. This makes it difficult to take full advantage of the potential of Super Hi-Res when converting images. Once again, modern computing power comes to the rescue! Kris will describe how he extended [[-Pix to support 320x200 SHR, pushing the limits of Apple //gs image quality.

### **3:15pm - 3:45pm The Learning Machine**

In which Charles Mangin attempts to demonstrate the fundamental tenets of machine learning with an Apple II.

### **3:45pm - 4pm Coffee Break**

### **4pm - 4:30pm SmartPort Options for your Apple II machines 2022**

It's been a year of changes and updates to the SmartPort landscape for the Apple II series of machines. In this session, Petar Puskarich will cover the current state of SmartPort controllers and devices available. He will include the new DIYSmartPort 4A release, the older kbhook SP card, the BMOW Yellowstone card as well as a few SmartPort devices. Special mention of the SmartPortSD, and FloppyEmu as attached via the different methods. Will also cover what to expect and what he has found during several rounds of extended testing. A special mention of the SmartPort FujiNet device will be shown.

**4:30pm - 5pm KansasFest 2022 Contest Winners**

KansasFest 2022 Contest Winners

**9pm - 10:30pm KansasFest 2022 Megapodcast (Zoom)**

A traditional gathering of KFest podcasting attendees to chat about the event and play games.