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- **Dream BiG**
- 





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- **Club SSCS**
- **Dream BiG**
- **Commitment and Reward**





University of Niš  
Faculty of Electronic Engineering



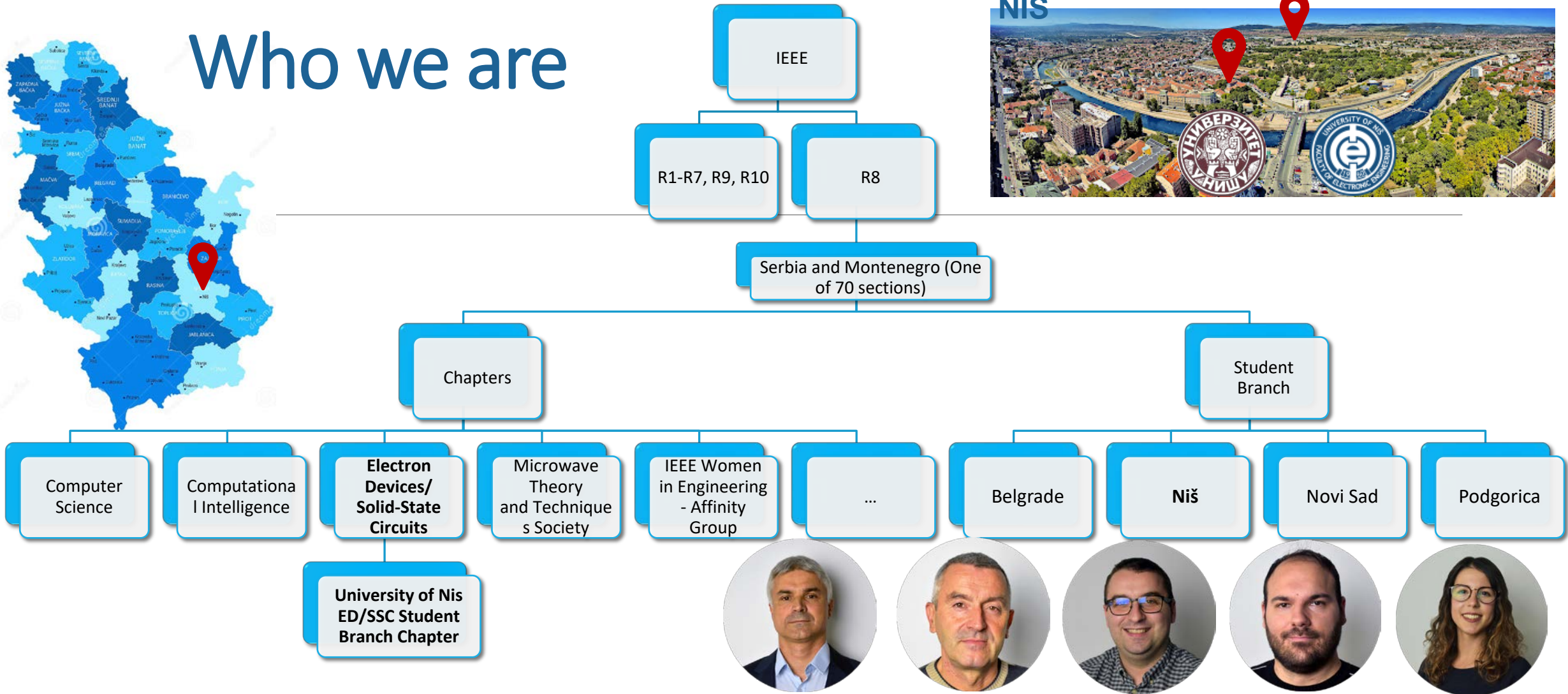
# University of Niš ED/SSC Student Branch Chapter

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Sandra Veljković, Danijel Danković, Vojkan Davidović,  
Miloš Marjanović, Nikola Mitrović

University of Niš, Faculty of Electronic Engineering – FEE UNI

# Who we are



<b>Danijel Danković</b>	<b>Vojkan Davidović</b>	<b>Miloš Marjanović</b>	<b>Nikola Mitrović</b>	<b>Sandra Veljković</b>
Joint Chapter Chair Electron Devices/ Solid-State Circuits	Treasurer Student Branch Niš/Electron Devices/ Solid-State Circuits	Joint Chapter Chair/Secretary Student Branch Niš/Electron Devices/ Solid-State Circuits	Secretary University of Nis ED/SSC Student Branch Chapter	Joint Chapter Chair University of Nis ED/SSC Student Branch Chapter

Realized at FEE UNI



# STEM Projects

## STEM visits IEEEESTEC conference

- 10 online/10 live workshops
- 6 schools (3 different cities)
- 100-120 high school students
- 15 papers for IEEEESTEC Conference



## Let STEM visit again IEEEESTEC

- Coming soon!!!

Powered by IEEE



Program Activity
Selection of schools and students
Entrance survey of students
Basic course - Practical application of electronic devices
Post basic course survey
Advanced course – Arduino IoT projects
Post Arduino course survey
<b>First objective</b>
Workshop - From idea to realization
Workshop - How to write a paper for a conference
Post workshops survey
<b>Second objective</b>
Preparation of papers for the IEEEESTEC conference
Making 3D prints for realized prototypes
IEEEESTEC conference and Competition for students
<b>Third objective</b>
Final surveys and report





# Cooperation with...



Faculty of Electronic Engineering, University of Niš



Ministry of Education, Science and Technological Development



Serbian Academy of Sciences and Arts



Electrical Engineering Students' European Association (EESTEC) Local Committee Niš



Centers for the Promotion of Science



Institute for the Advancement of Education and Upbringing

Regional Centers for Professional Development of Employees in Education



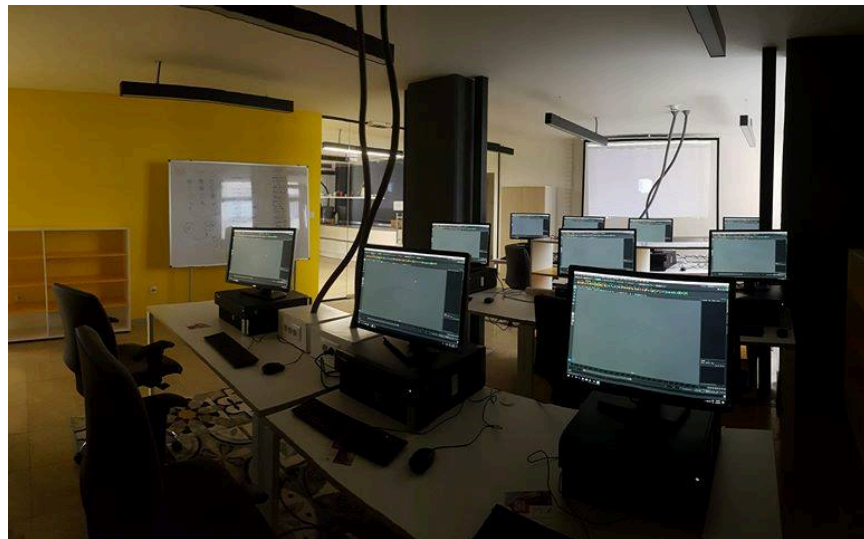
Лесковац

Science Clubs Leskovac, Niš...



High schools/grammars schools from whole Serbia

# Place where ideas are born – Student Creative Center of FEE UNI



**SSCS Chapters Webinar: Inspiring and Developing Tomorrow's Circuit Stars**

# Just in the past two months...

## Galaksija Cup

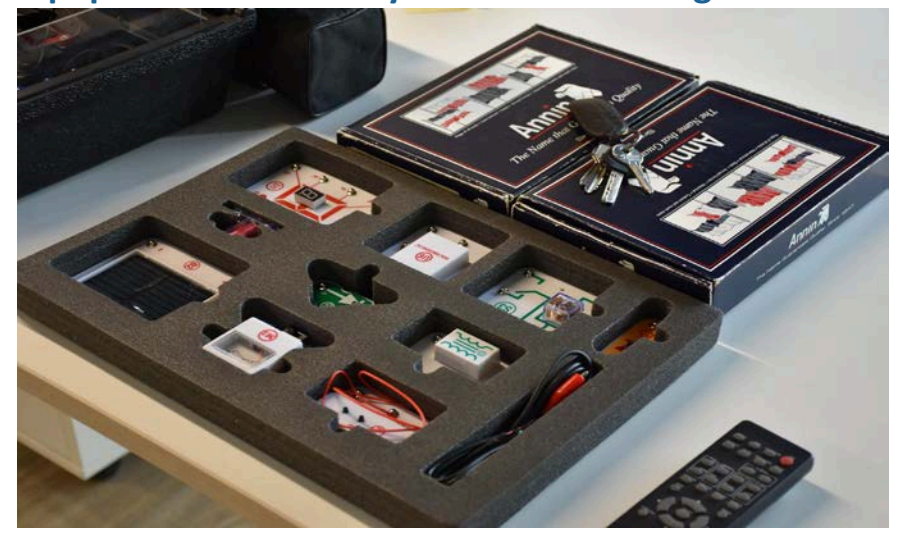
Competition based on Arduino platform



# Workshops with professors and students from ETŠ "Mija Stanimirović"



Equipment obtained by IEEE EDS-ETC Program



# Workshops with students from the grammar school "Bora Stanković"



# Workshops with students from the grammar school "Svetozar Markovic"



**Workshop and lectures for seminar participants in Petnica Science Center**

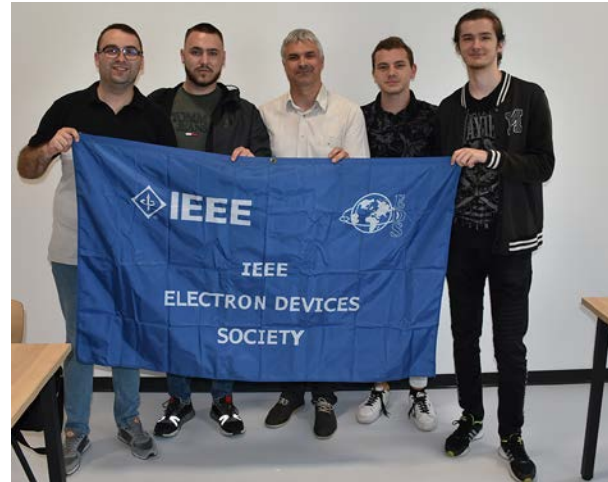


# Work continued with high school students from Nis and Leskovac





# The final round of the quiz for high school students



**SSCS Chapters Webinar: Inspiring and Developing Tomorrow's Circuit Stars**

# IEEEESTEC-International Students' Projects Conference

A story that has been going on for 15 years...

- 80-100 papers
- 30 institutions

## Organizers





# Our success on SPC...

## Student Paper Contest

- Student Paper Contest (SPC)
  - Historical Throwback
  - Hall of Fame

## Student Activities

- Student Activities
  - Announcements
  - Our Committee
  - Benefits for Students
  - Student Branch Vitality
  - Student Branch Cookbook
  - Awards for Students and Student Branches
  - Student Congresses (SYPs/SBCs)
  - Student Paper Contest (SPC)
  - IEEEDuino
  - R8 SAC Programs for Student Branches
  - R8 SAC Programs for Sections
  - Our Webinars
  - Follow Us

## SPC 2022

### Student Paper Contest 2022: 1st Phase Results

*in Announcements / Latest News and Updates / SPC 2022*

This year there were 15 submissions in total, from which 13 submissions were accepted as valid. The submissions were from the following student branches:

- University of Ljubljana, Slovenia
- Université catholique de Louvain, Belgium
- University of Maribor, Slovenia
- Ecole Mohammadia d'Ingenieurs, Morocco
- Politecnico di Torino, Italy
- Qatar University, Qatar
- University of Niš, Serbia
- Bogazici University, Turkey
- Moi University, Kenya
- Imperial College London, UK
- University of Technology and Applied Sciences-Ibra, Oman
- Onaizah Colleges, Saudi Arabia
- Linköping University, Sweden

This year, the members of the SPC international jury are:

- Prof. Paul Micallef from Malta
- Prof. Giambattista Gruosso from Italy
- Prof. Mike Hinchey from Ireland
- Prof. Vera Markovic from Serbia

The jury has anonymously selected the following five papers (listed in alphabetical order) for the Regional Oral Finals:

- Emilija Čojbašić, University of Niš, Serbia, "Machine learning as an aid to predicting clinical outcome after stroke"
- Krisjan Cuznar, University of Ljubljana, Slovenia, "Optimization of cold rolling process recipes based on historical data"

Benefits for Students

Student Branch Vitality

Student Branch Cookbook

Awards for Students and Student Branches

Student Congresses (SYPs/SBCs)

Student Paper Contest (SPC)

## itest

SPC

<

## SPC 2018

### SPC Contest 2018 Results

*in Hall of Fame / SPC 2018*

The Oral Presentations for the five finalists of the SPC 2018. The marks of the oral presentation, (max 30) were added to the final result. The first three prizes have also a financial reward Member Fund

**First Prize**  
Ahmed Abdelraouf Mohamed, Arab Academy for Science, Technology and Maritime Transport, Egypt

**Second Prize**  
Benjamin Chiém, Université Catholique de Louvain SB, Belgium, with the paper, "Supervised classification of structural brain networks reveals gender differences"

**Third Prize**  
Marko Mihajlovic and Nikola Popovic, University of Niš SB, Serbia, with the paper, "Fooling a neural network with common adversarial noise"

Congratulations to the three winners, but also to the other two finalists Nima Taghipour Bazargani, K.N. Toosi University of Technology, Tehran SB, Iran, with the paper, "A Novel Approach for Probabilistic Hurricane Resiliency Assessment of an Active Distribution System Using Point Estimate Method" Yazan Qiblawey with co-authors Ruslan Abu Sneh, Majd Ahmed Abduljabbar and Yousef Jamal Orabi, Qatar University, Doha SB,

## SPC 2021

### Student Paper Contest 2021: Final Results

*in Announcements / Hall of Fame / Latest News and Updates / SPC 2021*

The final part of the 2021 Regional Student Paper Contest (SPC) was held within the frame of the 2021-2022 academic year of the Faculty of Electrical Engineering, University of Niš, Serbia on 11 October 2021. The format of the final phase was online, and we managed to hold it thanks to the support of the jury members. In parallel to the online phase, the jury members also participated in person. On the other hand, the hybrid form allowed those who could not travel to participate in the event online. The marks of the oral presentation in the final part (max 30) were added to the marks from the assessment of the written paper in the first part of the contest (max 70) to give the final result.

Members of the international jury who assessed the oral presentations were Prof. Paul Micallef from Malta, Prof. Vera Markovic from Serbia, and Prof. Vera Markovic (also the SPC coordinator) from Serbia. In addition to them, Prof. Giambattista Gruosso from Italy also contributed to the work of the jury in the final part of the contest. Theoretical Computer Science, SB, Regional Student Representative attended the Oral Phase in person as well. The SB SAC Chair, Nijay Ghosh, participated in the event online.

### Final Results

#### 1ST PRIZE and award of \$800



Olivier Lambart<sup>1</sup>, Laili Tachief<sup>2</sup>, Nicolas Moraux<sup>3</sup>, Boris Grim<sup>4</sup>, Tristan Gilet<sup>5</sup>, Benoît Hachem<sup>6</sup>  
<sup>1</sup>UT Louvain SB, <sup>2</sup>University of Leuven, Belgium

"The optimization pedagogical value for every problem quality and applications in electric medium cavity"

In addition, the student branch of the winner, UT Louvain SB, gets an award of \$200.

#### 2ND PRIZE and award of \$500



Dae Gwani, Hyeon-Min Kim  
University of Ulsan SB, Korea

"Robust optimization of the target application in wireless networks with approximate labels"

#### 3RD PRIZE and award of \$200



Yazan Qiblawey, Binara Hameed  
University of Technology, Doha SB, Qatar

"New Generation Network Topology Extension System (NG-NTES)"

#### 4th and 5th Place

Damjan Doric, Predrag Kinkovic, Igor Vukobratovic  
University of Niš SB, Serbia

"Digital recognition with machine learning for people with visual impairment"

Selma Pusic, Fatima Zahra Leogier, Chama El Amroussi, Amal Ali Ben El Arts  
Ecole Mohammadia d'Ingenieurs, SB, Morocco

"Forecasting Kingpinography using Foreign Corrupt Practices Act (FCPA)"

# Chapter of the Year Award

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AWARDS COMMITTEES

JJ. EBERS AWARD

ROBERT BOSCH MICRO AND NANO  
ELECTRO MECHANICAL SYSTEMS  
AWARD

EDUCATION AWARD

DISTINGUISHED SERVICE AWARD

LESTER F. EASTMAN AWARD

CHAPTER OF THE YEAR AWARD

GEORGE E. SMITH AWARD

## Chapter of the Year Award

### Chapter of the Year Award Committee

The **EDS Chapter of the Year Award** is given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st – June 30th period. Chapters, please be sure to submit your reports to IEEE: IEEE Vtools - Chapter Activity Report (EDS Chapters & Student Branch Chapters)

EDS recently revised our Chapter of the Year Award to award one non-student chapter and one student chapter in any geographic location.

Nominations for the awards can only be made by Regions/chapters Committee members, SRC Chairs/Vice-Chairs, or self-nominated by Chapter Chairs. Please submit your **nomination form** by September 15th.

Each winning chapter will receive a plaque and check for \$500 to be presented at an EDS Conference or Chapter Meeting. Travel reimbursement will not be provided. A chapter that has previously received the Chapter of the Year Award is eligible for re-nomination only after three years from the year of the award.

2018 Regions 1-7 - ED/CAS North Jersey Chapter

Region 8 - ED/SSC University of Nis Student Branch Chapter

Region 9 - ED/RA Tunja Chapter

Region 10 - ED Malaysia Chapter

SSCS Chapters Webinar: Inspiring and Developing Tomorrow's Circuit Stars



# Thank You for Your Attention!



University of Niš  
Faculty of Electronic Engineering





# SSCS Chapters Webinar: Inspiring and Developing Tomorrow's Circuit Stars Tunisia Chapter Summary

# SSCS Tunisia Chapter

## *Officers - VOLUNTEERS*



- ▶ Chapter **Chair**: *Brahim Mezghani*
  - Professor at the Dept of EE in the Nat Eng School of Sfax (ENIS), Tunisia
  - PhD'2008 and HDR'2014 in  $\mu$ Elec, from the ENIS
  - MSc'1990 in  $\mu$ Elec and BSc'1988 in EE, from the UMN, Minneapolis, USA
- ▶ Chapter **Vice-Chair**: *Amel Neifar* (Res Cent  $\mu$ elect & Nanotech, Sousse)
- ▶ Chapter **Secretary**: *Hatem Trabelsi* (Prof, Dept. of EE, ENIS)
- ▶ Chapter **Treasurer**: *Chokri Rekik* (Prof, Dept. of EE, ENIS)
- ▶ Representative, **Junior Ambassador**: *Sinda Aloui* (AP, EE, ENIS)



# Junior events

*Why?*



- ▶ To stimulate the **interest** of very young and pre-university students
- ▶ An opportunity for very young students to discover ICs
- ▶ Leave an unforgettable impression as if we plant in them a **seed of interest** in microelectronics

# Junior events

*EN'JUNIOR (1<sup>st</sup> organized junior event)*



EN'JUNIOR 1.0 mainly consisted of organizing a visit and a guided tour to discover various on-going student activities in the ENIS.

The Chapter Junior Ambassador, Sinda Aloui, invited 40 students from two primary schools to participate in the 1<sup>st</sup> edition of EN'JUNIOR.

Thank you, my dear CEE students!





14/05/2022 08:07

Welcoming young students when they arrive to the ENIS and rising the Tunisian flag together with the National Anthem





Welcoming and registration of the young students by the students of the Club of Electrical Engineers (CEE) of the ENIS.



14/05/2022 08:18

The young student extremely happy with his first ever registration procedure for his first ever event.



14/05/2022 08:28

Young students, teachers, parents, and EE students are in the auditorium for the opening ceremony of the EN'JUNIOR event.





14/05/2022 08:28

EE student explaining the visit program. Prof & guests are in the auditorium for the opening ceremony of the EN'JUNIOR event.





14/05/2022 09:53

Participants are having a short break after the opening ceremony and before proceeding to the guided visit of the ENIS.





EE student explaining details and mode of operation of each part of their project of a homemade robot.



EE student showing various required electronic circuitry which they used in their project of a homemade robot.



2<sup>nd</sup> year EE student showing and explaining parts of the electronic circuitry they developed for their project of a homemade car.



Medals were also offered to the young students. These have been provided as a gift from our institution's Director Prof. Slim Abdelkafi.



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 Tunisia Chapter

IC Innovation

# Future junior events

***2SCS JR***

# Junior events

## 2SCS JR 1.0



- ▶ The name will be used for all future junior events organized by the SSCS Tunisia Chapter
- ▶ The organization of the 1<sup>st</sup> edition of the 2SCS JR is planned on August 30<sup>th</sup>, as a part of a summer LeadCamp for high schoolers
- ▶ Planned activities during the 2SCS JR 1.0 include the study of the generally employed ICs in various electronic boards



During a previous LeadCamp edition, the students are testing one of the homemade smart-cities.

# Junior events

## 2SCS JR 2.0



- ▶ Organization of the 2<sup>nd</sup> edition of 2SCS JR event, during next fall
- ▶ It is intended for pre-university laureate students
- ▶ The first 5 students from the 6<sup>th</sup> year and 7<sup>th</sup> (final) year from several high schools in the region will be identified and invited to participate in the unforgettable event 2SCS JR 2.0
- ▶ For best possible experience, we plan on forming small groups for parallel guided tours



# Advice to other Chapters

## *Steps to organize junior events*



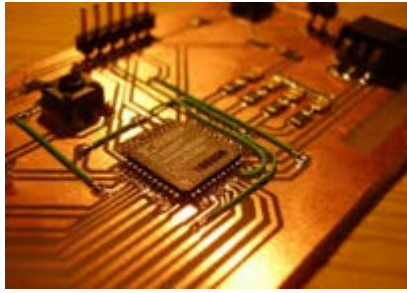
- ▶ At your own Institution, you should contact the:
  - Director to ask for permission
  - EE Department or the others to use their Labs or infrastructure
  - Student's clubs including the IEEE ones
  
- ▶ At the primary school, or high school, you should contact the:
  - Director to ask for permission
  - Teachers who will help to identify the young student participants
  
- ▶ Discuss and choose a 'good' day for the event organization
  
- ▶ You should prepare what you're planning on showing and giving to students to make it the most memorable visit of their lives

# Advice to IEEE Volunteers

*Working WITH and FOR juniors*



- ▶ In addition to IEEE benefits, you add your personal satisfaction
- ▶ Volunteering is giving without waiting to get something back
- ▶ When dealing with junior folks, you should know that the volunteering work you're doing impacts your own personal life!
- ▶ If you have this conviction your words will have a huge impact on the young students
- ▶ This would help in getting their attention, increasing the impact of whatever you're planning on doing WITH them and FOR them.

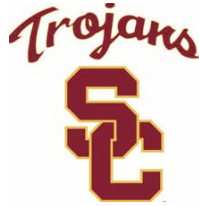


# Filling the EE/ECE pipeline

Tony Mauro  
June 2022

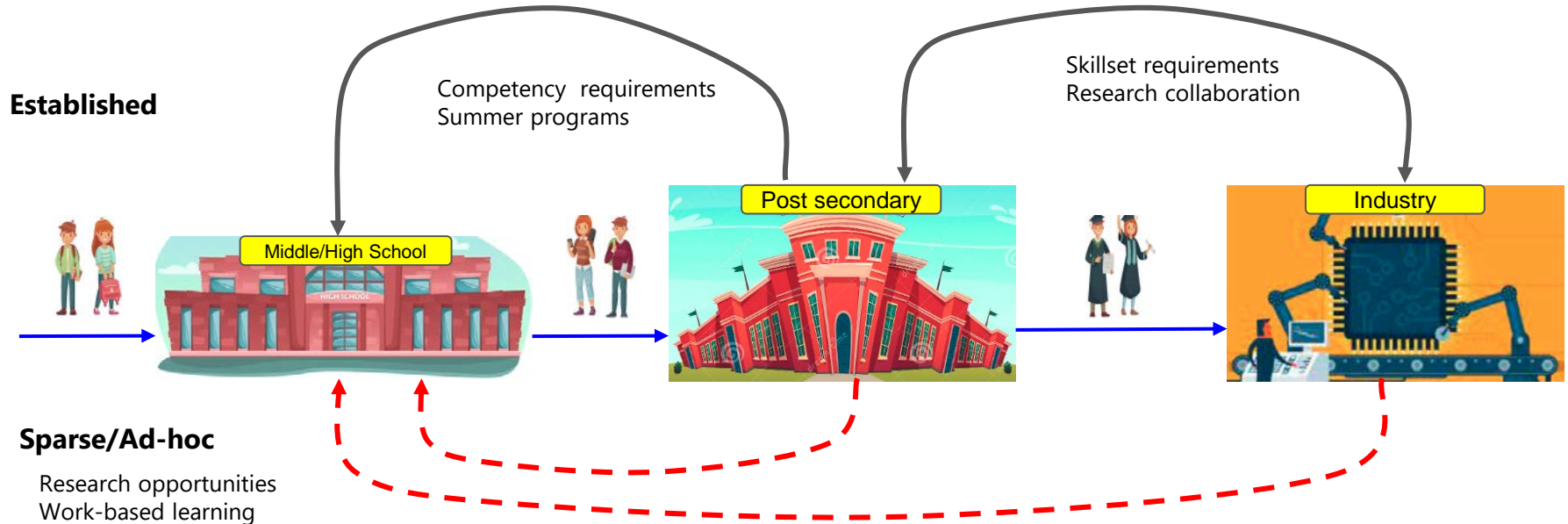
# Tony Mauro - Background

- BS/MSEE degrees from Cal Polytechnic University and USC
- Industry experience: 1993-2015 at Qualcomm
  - Digital Hardware designer, DSP Multimedia, Security
  - Registered Patent Agent
  - Founded NexStream Tech Education in 2020
- Teaching experience: 2008 - present at Canyon Crest Academy, San Diego, CA
  - Electronics circuit design, Computer Science
- Interests
  - Work-based learning models for secondary schools
  - Technical: HDL's, Machine Learning, Neuroscience
- Contacts: [LinkedIn](#), [NexStream](#), [tony.mauro@sduhsd.net](mailto:tony.mauro@sduhsd.net)



# Challenge - how to fill the 'front-end' of the EE/ECE pipeline

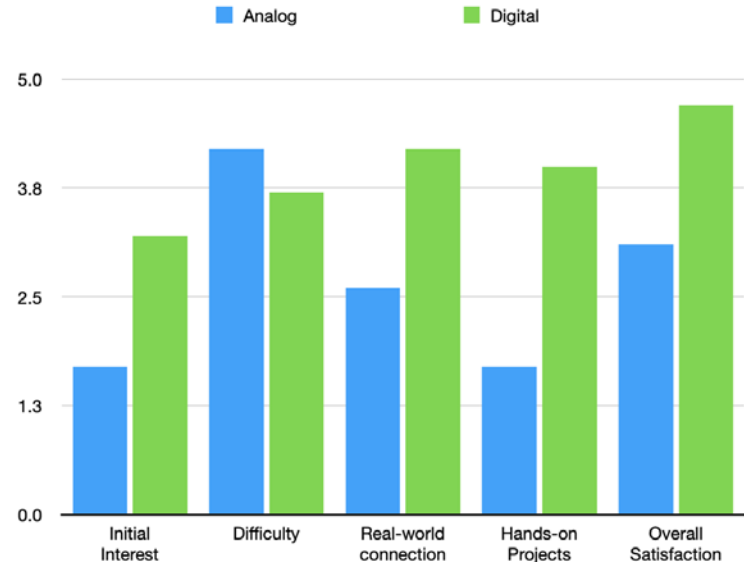
- Engaging students in a high school electronics courses
- Interactions (from a high-school teacher's perspective)



# High School Student Engagement

## *What works and what doesn't*

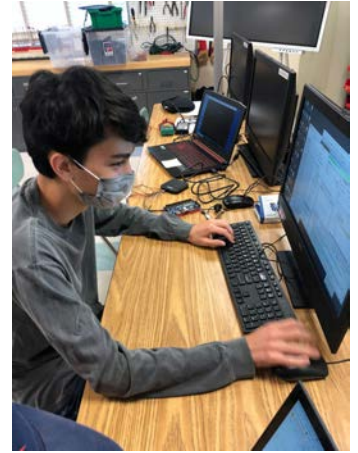
- Electronics Circuit / Digital Electronics Course - end of course 'satisfaction' survey on content
- Analog Circuit Design
  - Basic network analysis
  - Analog filters
  - Rectifiers
  - Amplifiers
- Digital Logic Design
  - Combinational logic control
  - Flip-flops / Counters
  - Sequential logic control (state machines)
  - High-level description language (Verilog)



# High School Student Engagement

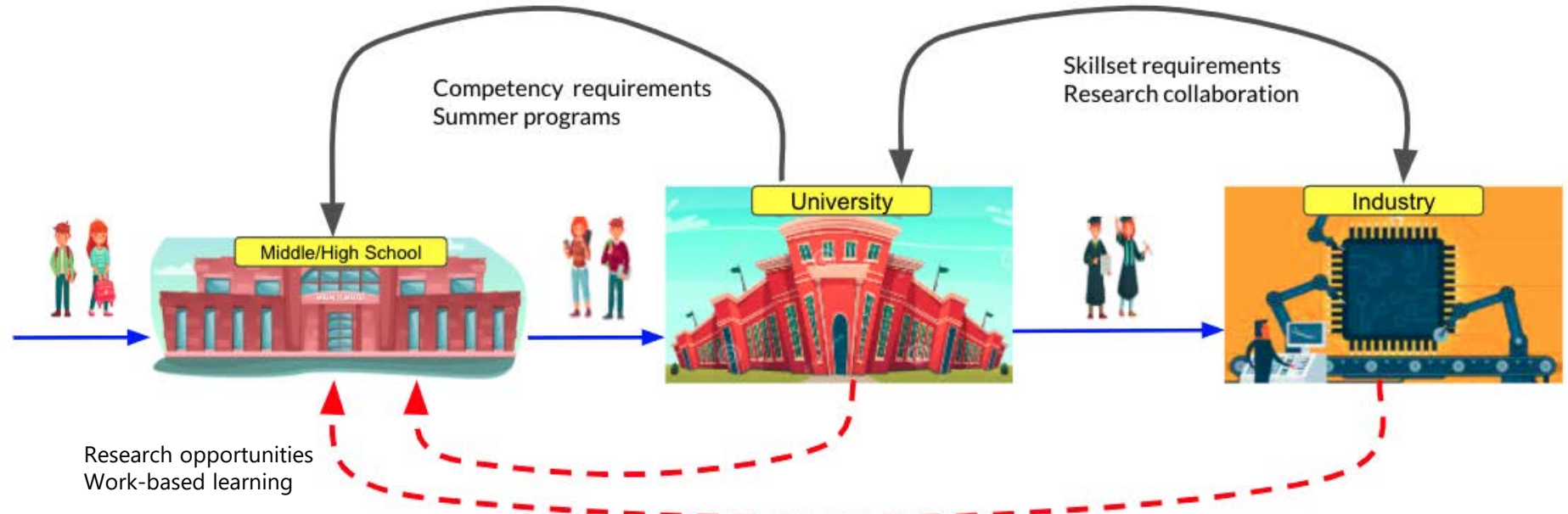
## *What works and what doesn't*

- Provide connections to market - what is used where?
  - Analog: Radio (filters), AC-DC conversion (rectifiers), Signal amplification and logic gates (transistors)
  - Digital: Computers (CPU pipeline, GPU), Vending machines, Garage door controller (state machines)
- Supplement with hands-on projects - definitely a must have
- Digital units preferred. Why?
  - Projects aren't as theoretical
  - Easier to connect to real world applications
  - Design software readily available (Logisim, Vivado)
  - Hardware readily available (SSI, MSI, FPGA)



# Interactions (Internships and research)

- Provide Work-Based Learning (WBL) experiences
- Have implemented industry collaboration model in high school
- Extensible to post-secondary education





# Interaction Wish List



Wish List (what?)	Target		Challenge (why?)	Possible Solutions/Benefits (how?)
	Post secondary	Industry		
<b>Marketing</b> <ul style="list-style-type: none"> <li>• AP EE courses</li> <li>• Certifications</li> <li>• Teacher training</li> <li>• Salary surveys, Industry 'rockstars'</li> </ul>	<input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• No demand (?) Students less inclined to enroll in rigorous non-AP course</li> <li>• Many cert programs available but value is questionable. Not built into course curriculum</li> <li>• Programs are rigid, teacher are apprehensive</li> </ul>	<ul style="list-style-type: none"> <li>• Propose courses to college board</li> <li>• Provide extension courses for college credit</li> <li>• Provide courses built around certification</li> <li>• Provide resume padding (certifications, awards)</li> <li>• Build rapport with parents</li> </ul>

# Interaction Wish List



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# Interaction Wish List

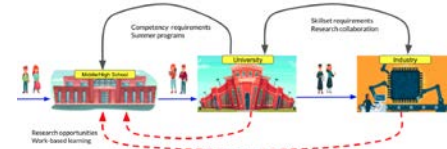


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<b>Work-based Learning Industry and Research-based internships</b> <ul style="list-style-type: none"> <li>• Workforce readiness/training</li> <li>• Competitions</li> <li>• Research opportunities</li> </ul>	<input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Is it possible to create non-degree workforce training programs?</li> <li>• Requires organization/funding (e.g. FIRST)</li> <li>• Mentor responsibilities, engagement</li> <li>• Facility availability</li> </ul>	<ul style="list-style-type: none"> <li>• Offer certifications (e.g. 'preferred skill sets' to join company ABC or attend University XYZ)</li> <li>• Work with industry leaders to define what a program would look like</li> <li>• Offer scholarships, prizes to engage students</li> <li>• <b>Flipped internship/research model (more on this next)</b></li> </ul>

# Internships / Research

*What works and what doesn't*

## Traditional Internship Challenges



### Industry/Post-secondary Partner Engagement

- Work permits / labor laws
- Facility resource allocation (desks, cubicle, lab space)
- On-site management
- Liability insurance

### School District

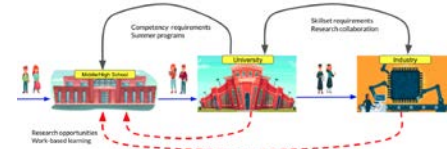
- Student's schedule (time)
- Liability insurance
- Transportation
- Funding (butts in seats)



# Internships / Research

*What works and what doesn't*

## Traditional Internship vs. Flipped Model



***Internships provide students opportunities for supervised and specific practice for a future career. (CALPADS definition)***

Off campus

Students apply classroom learning in a workplace setting.

Teacher facilitates, Industry partner manages student work

On campus

Students apply workplace learning in a classroom setting.

Industry partner facilitates, Teacher manages student work

# Interactions - Flipped-Internship Model in Practice



- Local industry partner (mentor) coordinates engineering projects, Team (students) execute, Team manager (teacher) tracks day-to-day activities

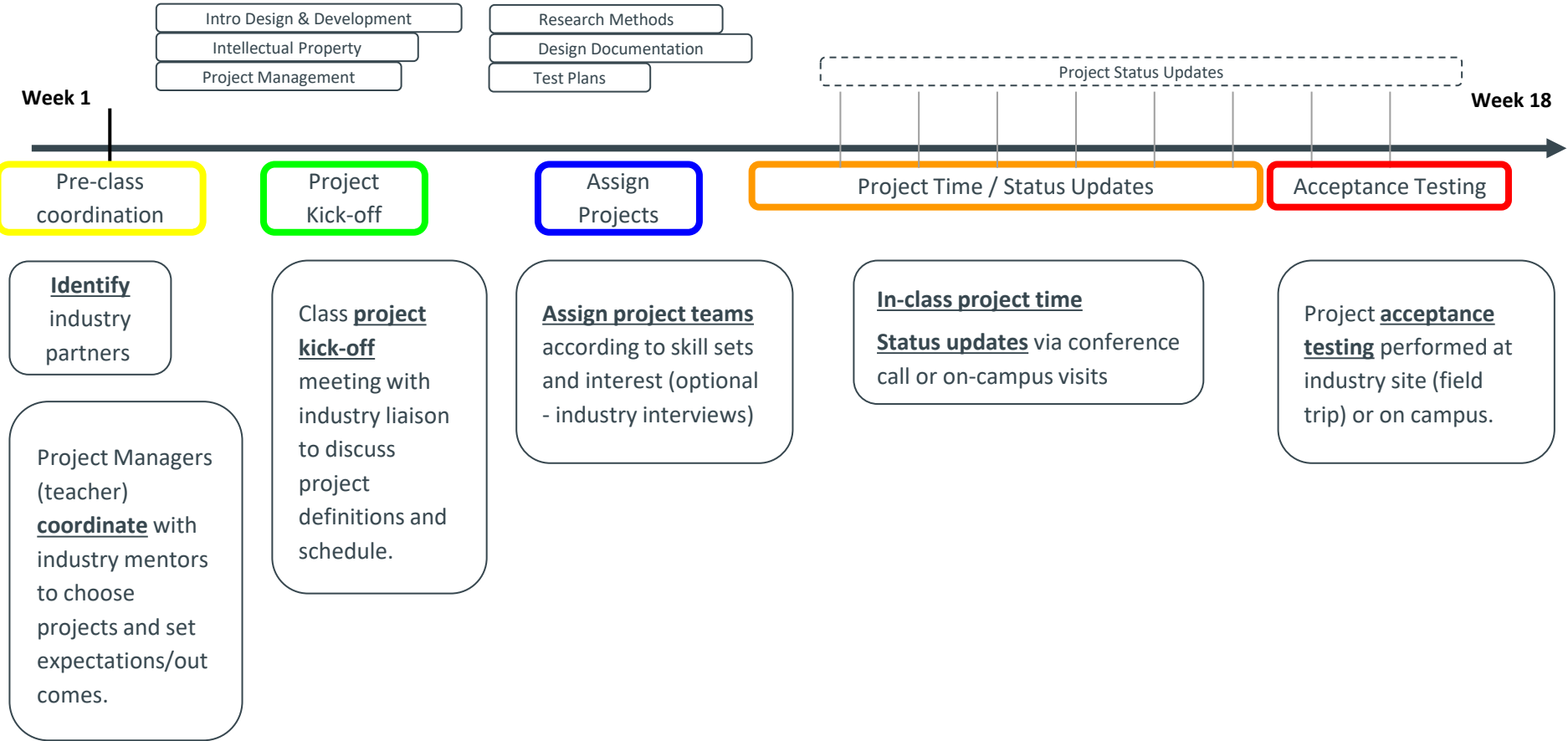


- Project-based work allocated during class time



- Industry partners provide feedback, guidance and performance rubrics

# Interactions - 'Flipped' Course Content and Timeline



# Interactions - Benefits of Flipped Internships/Research

## Student Participants:

- Real-world WBL experiences
- Exposure to design process, not just tech content
- Networking opportunities
- Flexible (COVID-proof)

## Industry/Post-secondary Partners:

- Positive community outreach (good PR!)
- Execution of unstaffed projects
- Eliminates oversight, insurance, labor costs
- Pipeline to future workforce/students





Backup

# What is Work-Based Learning?



... a continuum of intentional activities and experiences designed to expand the boundaries of the classroom and prepare students for future career opportunities. Activities and experiences begin as early as pre-kindergarten and continue through post-secondary education.

[WBL Framework citation](#)



# What is Work-Based Learning?

## CAREER AWARENESS

### Learning ABOUT work

Building awareness of the variety of careers available and the role of postsecondary education.

### Experiences might include:

- Workplace tours
- Guest speakers
- Career fairs
- Visiting parents at work

Elementary school

## CAREER EXPLORATION

### Learning ABOUT work

Exploring career options for the purpose of motivating students and informing their decision-making in high school and postsecondary education.

### Experiences might include:

- Informational interviews
- Job shadowing
- Virtual exchange with a partner

Middle school

## CAREER PREPARATION

### Learning THROUGH work

Applying learning through practical experience that develops knowledge and skills necessary for success in careers and postsecondary education.

### Experiences might include:

- Practicums
- Internships
- Integrated project with multiple interactions with professionals
- Student-run enterprises with partner involvement
- Service learning and social enterprises with partners
- Compensated internship connected to curriculum

High school

## CAREER TRAINING

### Learning FOR work

Training for employment and postsecondary education in a specific range of occupations.

### Experiences might include:

- Internships required for credentials or entry to an occupation
- Apprenticeships
- On-the-job training
- Work experience

Post secondary



Work-based Learning Codes will be analyzed for inclusion in the Fall 2022 Dashboard

# Why is WBL important

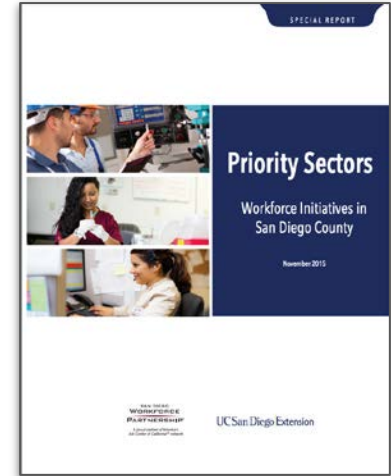
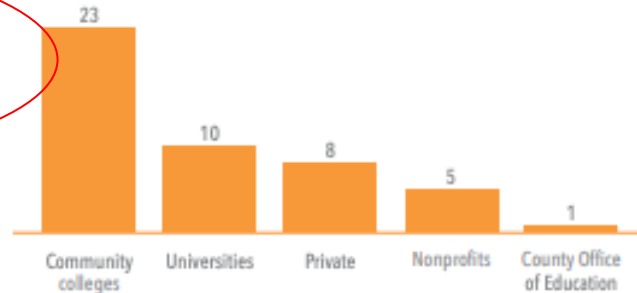
Priority Sector Reports detail workforce gaps and challenges in key industry sectors, and then offer suggestions to address challenges and *ensure a strong future workforce*.

5 Key sectors Profiled in 2015 Report: Advanced Manufacturing, Clean Energy, Health Care, Information and Communication Technologies (ICT), and Life Sciences.

## Advanced Manufacturing

- Change the public perception of traditional manufacturing to Advanced Manufacturing
- Foster science, technology, engineering and math (STEM) education in the K-12 system
- Add internship/work experience requirements to training and education programs
- Increase the number of public-private partnerships to share resources
- Expand and develop the talent pipeline
- Align the workforce system with employers' needs
- Standardize certifications and create articulation agreements
- Increase employer knowledge of and access to business assistance programs

To date, there are 57 workforce initiatives in San Diego's Advanced Manufacturing sector. 47 of these initiatives are training and education programs. The figure below shows the breakdown of these programs.



# Democratizing IC Design: The IEEE SSCS PICO Program

**Boris Murmann**

[murmann@stanford.edu](mailto:murmann@stanford.edu)

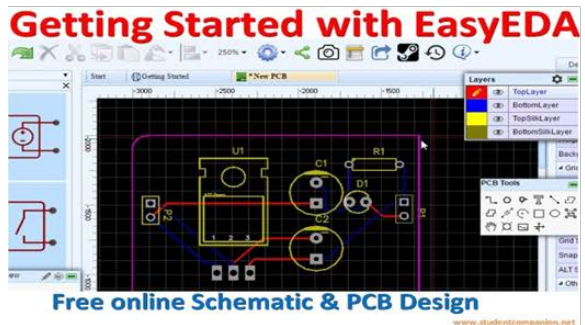
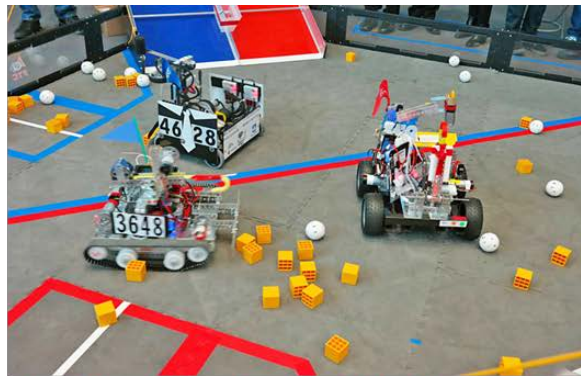
**Chair, SSCS TC Open-Source Ecosystem**

**June 29, 2022**



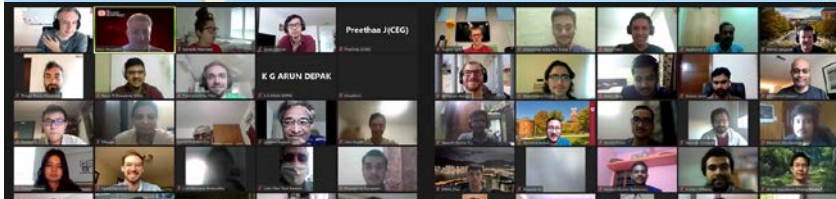
# How to Attract IC Design Talent?

- Current generation thrives on collaborative maker culture
- Make IC design more accessible, inclusive, open
- Leverage rapidly growing open-source ecosystem



# Platform for IC Design Outreach (PICO)

## Open-Source Chipathon 2021



Omiya Hassan (She/Her) • 1st  
Graduate Instructor at University of Missouri-Columbia  
5mo • Edited •

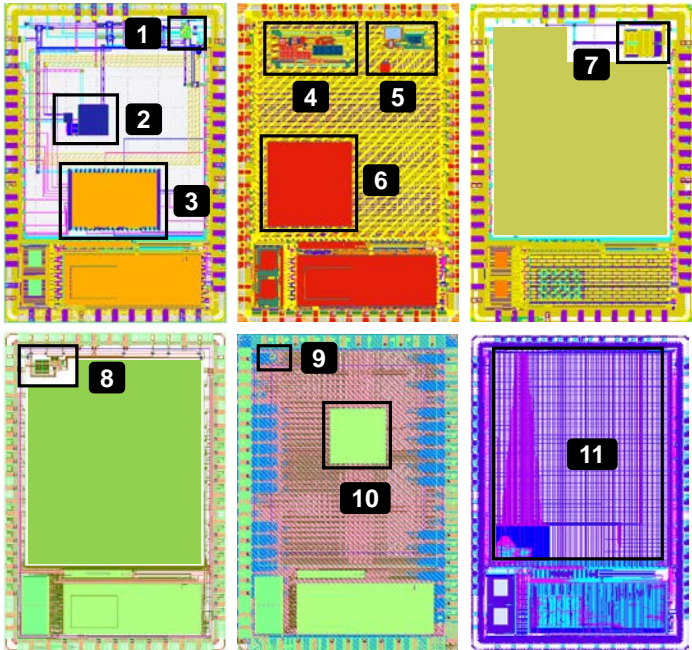
Making IC Design OPEN-SOURCE!

It's truly an amazing opportunity to be selected as one of the 18 teams around the globe that will be participating in the IEEE SSCS PICO Design Contest and getting our hands dirty on the new Google-skywater's open-source 130nm PDK!

Thank you [IEEE SSCS](#), [Efabless Corporation](#), and [Boris Murmann](#) for this initiative!  
Excited to be working with you all in the upcoming months

- 61 design proposals  
18 selected  
11 taped out
- Weekly meetups  
(August-November)
- IEEE & SSCS student memberships offered to all participants
- ...
- Pakistan team starting a new SSCS Student Branch Chapter

# Designs Completed & Taped Out



	Function	Team	Chip URL
1	5G bidirectional amplifier	Pakistan3 (FAST National University)	<a href="https://efabless.com/projects/560">https://efabless.com/projects/560</a>
2	Wireless power transfer unit	Pakistan2 (FAST National University)	
3	Variable precision fused multiply-add unit	Pakistan1 (FAST National University)	<a href="https://efabless.com/projects/474">https://efabless.com/projects/474</a>
4	Oscillator-based LVDT readout	India2 (Anna University)	
5	Temperature sensor	India1 (Anna University)	<a href="https://efabless.com/projects/476">https://efabless.com/projects/476</a>
6	GPS baseband engine	India3 (Anna University)	
7	Ultra-low-power analog front-end for bio signals	Brazil2 (U. Federal de Santa Catarina)	<a href="https://efabless.com/projects/470">https://efabless.com/projects/470</a>
8	TIA for quantum photonics interface	USA4 (University of Virginia)	<a href="https://efabless.com/projects/473">https://efabless.com/projects/473</a>
9	Bandgap reference	Egypt (Cairo University)	<a href="https://efabless.com/projects/540">https://efabless.com/projects/540</a>
10	Neural network for sleep apnea detection	USA2 (University of Missouri)	
11	SONAR processing unit	Chile (University of the Bio-Bio)	

- Tape-out via Efabless chipIgnite program (130nm SkyWater)
- All designs shared on GitHub



# SSCS TC Open-Source Ecosystem



Boris Murmann  
Stanford  
USA



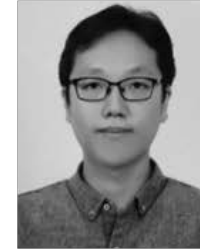
Thomas Brandtner  
Infineon  
Austria



Francisco Brito Filho  
Fed. Univ. Semiario  
Brazil



J. Dhurga Devi  
Anna Univ.  
India



Jaeduk Han  
Hanyang Univ.  
Korea



Chiraag Juvekar  
Apple  
USA



Rana Muhammad  
FAST National Univ.  
Pakistan



Harald Pretl  
Kepler Univ., Linz  
Austria



Priyanka Raina  
Stanford  
USA



Mehdi Saligane  
Univ. Michigan  
USA



Mirjana Videnovic-Misic  
Silicon Austria Labs  
Austria

# TC-OSE Charter

- Organize Chipathon
- Engage with broader open-source community
- Engage with industry players/consortia
- Develop publication venues for open source
- Contribute to tools & education infrastructure
  
- Please talk to us if you want to get engaged!

# Ongoing Chipathon



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**2022 SSCS "PICO"  
Open-Source Chipathon  
Proposal Deadline: May 1, 2022**

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The IEEE Solid-State Circuits Society is pleased to announce its second open-source integrated circuit (IC) design contest under the umbrella of its [PICO](#) Program (Platform for IC Design Outreach). While this contest is open to any individual or team, we especially encourage the participation of pre-college students, undergraduates, and geographical regions that are underrepresented within the IC design community.



55 submissions, 22 teams selected

# Links

- PICO program overview
  - <https://sscs.ieee.org/about/solid-state-circuits-directions/sscs-pico-program>
- TCE-OSE resource page
  - <https://sscs-ose.github.io/>
- Chipathon volunteer sign-up
  - <https://sscs.ieee.org/volunteer-opportunities#SSCD>