



AMERICAN
PRECISION OPTICS
MANUFACTURERS
ASSOCIATION

GENERAL MEETING - Optifab

Wednesday Oct. 22nd, 2025



APOMA is the focal point of American precision optics manufacturing collaboration, facilitating the ongoing exchange of ideas and expertise amongst our diverse membership base. By advancing workforce development, defining industry standards, and sharing process improvements and innovations, APOMA bolsters operational excellence throughout all aspects of optics manufacturing. Membership consists of fabricators, coaters, material scientists, engineers, designers, and educators; who share in the unified goal to **make light work** in the United States.



AGENDA

- Introduction
- Board Election
- Walt Czajkowski Scholarship
- Executive Director Update
- Guest Speakers
 - R&D Tax Credits
SAMUEL WOOLDRIDGE
 - Optifab - SPIE
CALEB KLINE
 - Workforce Development
ALEXIS VOGT, PhD
- 2026 Technical Conference Announcement

BOARD MEMBERS 2025 (current)



Zach Hobbs

President

SYDOR OPTICS



Timothy Kennedy

President-Elect

EDMUND OPTICS



Lee Steneken

Past-President

ESCO OPTICS



Dave Mohring

Treasurer

OPTIPRO



Chris Russell

Secretary

UNIVERSAL PHOTONICS



Dr. Alexis Vogt

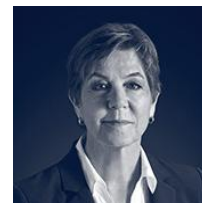
Academic Member

MONROE COMMUNITY
COLLEGE



Michele Stolberg

Admin



Mitzi Brennan

At-Large Member

PUREON



Dave Shelton

At-Large Member

AMERICOM



Brian Myer

At-Large Member

OPTIMAX



APOMA BREAK OUT ROOM

Available to APOMA members & guests only

- Meeting space
- WiFi access
- Perfect for members not exhibiting
- Connect with other APOMA members

LOCATION

First Floor across from Registration and near the coat area. Look for our sign.



CALL FOR NOMINATIONS: 2026-28 BOARD ELECTION

There will be (1) At-Large Board seat up for election this year.

- Seat is currently held by Mitzi Brennan from Pureon.
- The term for this seat runs from Photonics West 2026 through Photonics West 2028.

APOMA is looking for members that want to serve as we move the association forward and continue our current growth.

If you are interested, please submit a Biography and (3) Letters or Emails of Reference/Support from current APOMA members to Chris Russell, APOMA Secretary, at ChrisR@universalphotonics.com.

Nominations must be received by November 20th, 2025.

The election will take place in December so please check your inbox during this time for voting information and deadlines!

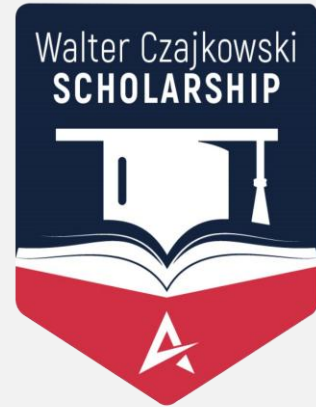


Throughout his 45-year optics engineering career, Walt was devoted to the advancement of the optics industry and those who embraced it. He was actively involved in promoting optical standards from early on and served as a manufacturing consultant for the American Precision Optics Manufacturers Association (APOMA) from 1996 until 2016, where he continued to help shape the trajectory of the industry.

In Walt's honor, we are launching the APOMA & SPIE **Walter Czajkowski scholarship** drive. How is the scholarship different? It is open to anyone in the field of optics, including current workers continuing their education, trade schools, and traditional education paths. Awards will be chosen annually by a joint committee of APOMA, including Walt's family and SPIE. The scholarship funds will be administered by SPIE, so any donations are tax exempt. Furthermore, SPIE has generously agreed to match any funds. The donation period starts in October 2025, and we will be driving through Photonics West 2026. The size and duration of the awards is contingent on how much money is raised, and we will be keeping the APOMA membership updated.

If you are interested in supporting this effort, please click on the link listed on the APOMA website to be taken to SPIE's contribution page, then scroll down to the section detailing the scholarship: [Donate to SPIE – Walter Czajkowski Scholarship](#) or, email SPIE directly at contribute@spie.org and add "Walter Czajkowski fund" to the subject line of your email.

Thank you for your support!



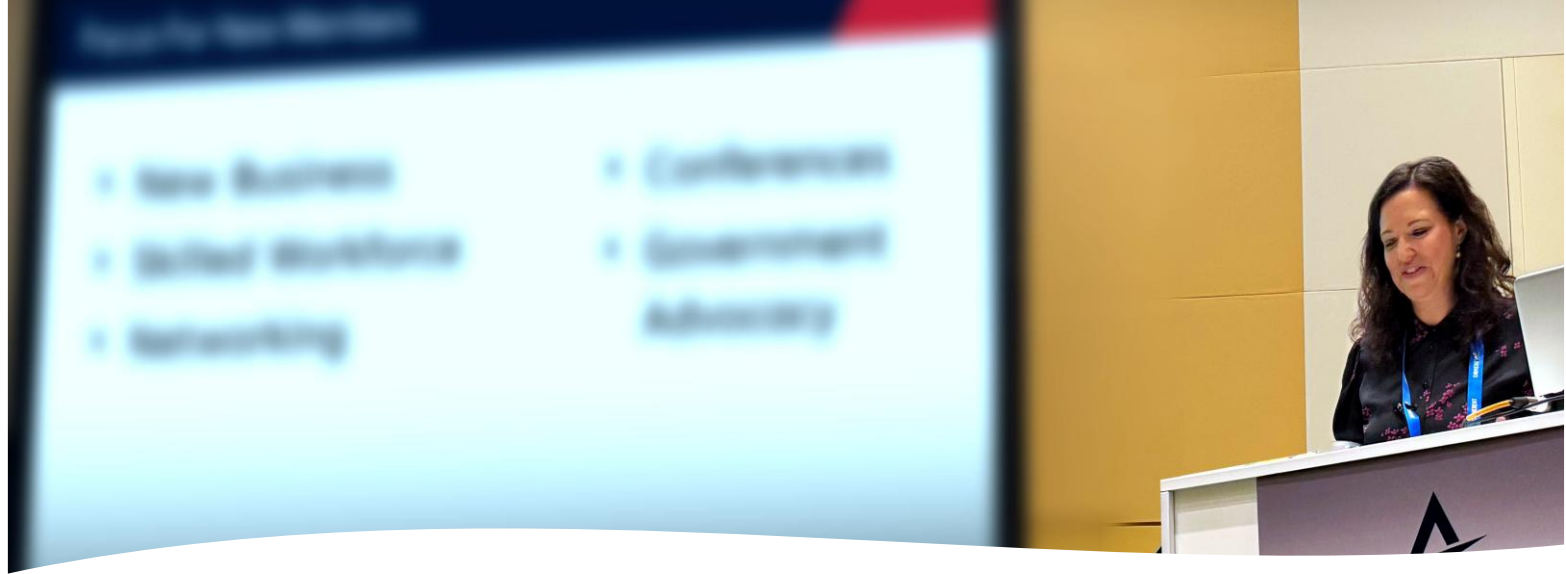


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ASSOCIATION

APOMA Executive Director Update

Presented by Yvette Pagano

Oct. 22nd 2025



- **Introduced to APOMA Membership at Photonics West 2025:**
 - Hired by the board to conduct member survey and develop strategic plan- Baptism by Fire
 - Wonderful to meet so many members so quickly, feedback was candid
 - Due to my late registration, I stayed at sketchy area- have already booked Marriott for this year's event

Companies Interviewed

SPIE	DCM Tech	Jenoptik	OptiPro	Dioptic	Colorado Thin
Satisloh Group	Escolas Optics	Pureon	Universal	Corning Glass	Films
PFG Optics	Photonic	Glass Fab Inc.	Photonics	La Croix	Larsen
Schott North America	Cleaning Technologies	ThorLabs	Opto Tech	Sussex	Equipment Design
Ecoclean	AccuCoat Inc	Esco Optics	Apré	Community College	IRD Glass
ValTech Corporation	AmeriCOM	Inrad Optics	Schneider	Valencia	
Naked Optics Corp.	Monroe Community College	QED Technologies	Optical Machines	Community College	
		Sydor Optics	United Lens	Vertex Optics	
		Edmund Optics	Heraeus		

Why Members Join & Stay in APOMA

Networking & Industry Relationships

- APOMA plays a crucial role in industry crises, fostering unity and information-sharing.
- Provides a trusted platform for major business discussions, including M&A opportunities.

Tech Conference & Trade Show Benefits

- Many join to access Optifab exhibit discounts and present at the Tech Conference.

Industry Support & Legacy

- Many members have historical ties to APOMA, passed down through leadership transitions.
- Some view membership as an “insurance policy” for future challenges.

FOMO (Fear of Missing Out)

- Some members stay simply to keep informed and connected, despite limited direct engagement.

Start or Keep Doing – Top Answers
(85% of respondents)



Enhanced Communication & Engagement aka NETWORKING

A forum for open discussions without a strict agenda- dinner and drinks #1 answer

More updates on APOMA activities, government policies, and global optics trends.

Greater presence on social media.



Government Advocacy

Stronger lobbying presence in Washington, D.C.

More communication on government policies affecting optics.

ITAR export controls



Members want gov't \$\$\$ too

APOMA members want guidance on access gov't programs- grants, state, local, and federal assistance

Assistance working with prime gov't contractors



Enhanced Communication

- Installing Hub Spot CRM was a huge lift but now we have central hub for all member info and communication
- Enews, Opti-Fabulous Party, and Upcoming Board elections all managed through HS
- Members are identified as general member, voting member, or accounting member
- Companies are identified as associate member, corporate member, academic member preferred partner, vendor or non-member
- Remember- anyone can sign up for the APOMA newsletter-so our database expands beyond membership



Enhanced Communication & Brand Building

- Trade on existing assets- Yvette (Rogers) Pagano (me) has 8,000 followers on LinkedIn
- Created the APOMA LinkedIn page- open to the general public
- We re-created APOMA private LinkedIn group- must ask to join
- APOMA page “follows” all APOMA member companies
- Social Media “posse” in development – work with marketing departments
- Raise profile of APOMA as well as our member companies
- Thought leadership and FOMO

VIP Cocktail Party- DCS Show

- Exactly what members asked for VIP networking no agenda
- Chance to interact with APOMA board
- Exclusive and elite
- Huge shout out to SPIE – co sponsor and use of Presidential Suite





Opti-Fabulous Party- Theme –Exhibitor Appreciation aka Booth Heros
Goals- Bring APOMA members together for conversation and fun, no special “agenda”
Create FOMO for non-members

Where in the
world is APOMA
Executive
Director, Yvette
Pagano



Photonics West 2025

Raising Profile of Members- Tours & Events



I take a company tour- promote company on LinkedIn, tag myself – and boom average of 6,000 views- helps member company with SEO, and increases FOMO



DCS show, and I'll do it again here at Optifab, promote every member who has a booth on social



lobby days- promote every member that is there, especially if public speaking- example Dave Morning and Dave Shelton-
that time with



WNY golf outing- same thing- promote members involvement



Open houses- example Optipro demo days



Action item- Invite Yvette to your events!

Government Advocacy Lobbying



APOMA wants every member of Congress to join the bi-partisan Optics and Photonics caucus- Joe Manchin joined caucus with Brian Schatz (D-UT)



Attended SPIE's Industry Days in Washington D.C. specifically to rep APOMA companies that could not



Formed APOMA gov't lobbying committee



Presented to technology staffers- warm reception but haven't put real pressure yet



Pending triple threat



Goal- 5 new members before Photonics West

Congressman
Joe Morelle-
Honorary
Member



Workforce Development

It's complicated- apprenticeships, 2 year certificate programs, “power” classes, meeting need of members throughout USA

Formed committee with APOMA members of industry and academia

APOMA isn't creating anything- trying to serve as a web and connector, and educator for APOMA members

Members helping Members

Thought leadership- 2 articles Germinum and Cerium Oxide

Luminate cohort 8 sponsorship – first access for members

Big idea...not sure if it will work

Launched Preferred Partner Program

Re-Launched Walt Scholarship

What can you do?

Elevate APOMA- through LinkedIn- connect with Yvette, APOMA page, APOMA group, and be sure your company is following APOMA

Wear your APOMA pin- not just a Opti-Fab

#1 way to help a member- buy something from them- utilize APOMA directory

Sell something to a member- PPX – restaurant term

Refer a member or give them a positive review

Share knowledge

Invite Yvette to major company events, ask to be profiled

Conclusion

APOMA is awesome and I love my role as Executive Director



We have built a strong foundation but there is more to be done

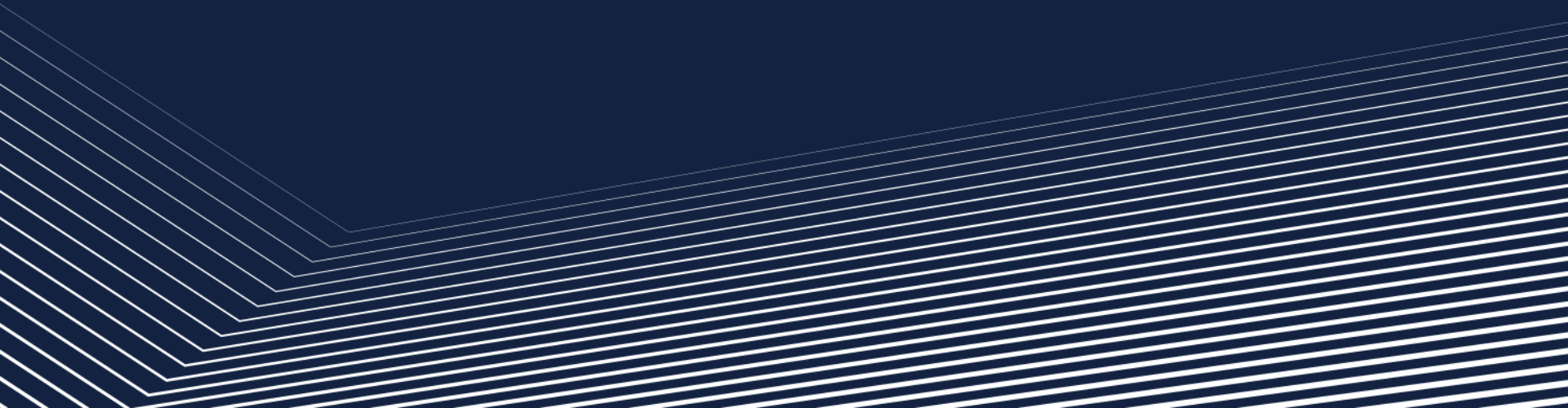


Next Steps....



Get ready for greatness including 2026 Tech Workshop

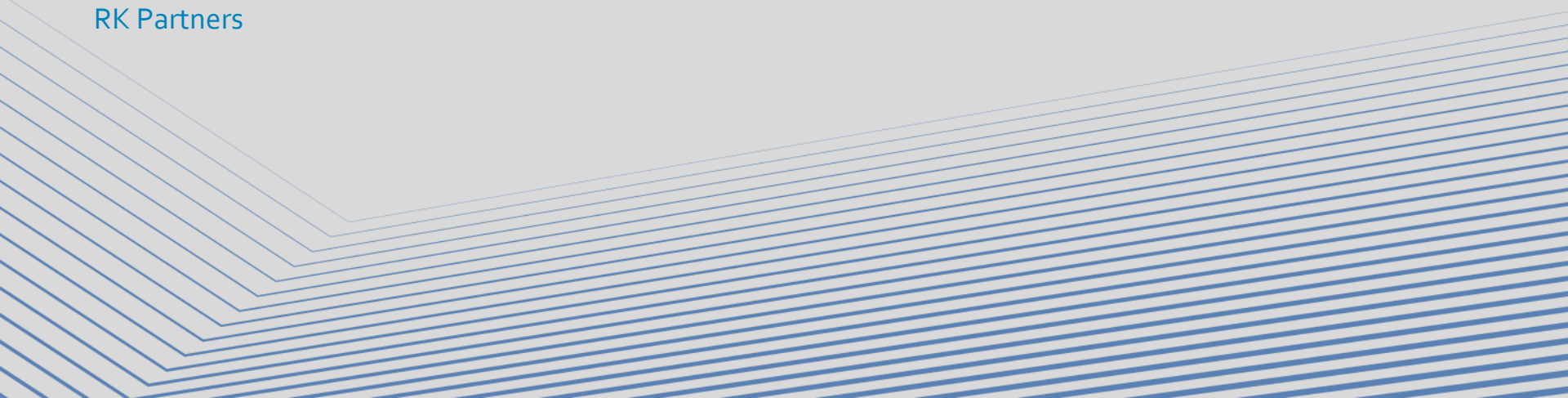
GUEST SPEAKERS



R&D Tax Credits

Samuel Wooldridge & Mark Kashinskiy

RK Partners

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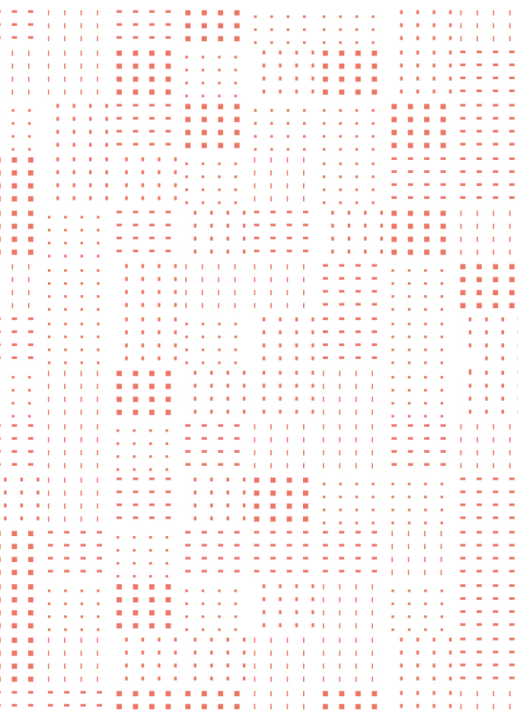
R&D Tax Credits

How can you benefit as an APOMA Member?

10/22/2025

Agenda



- 
- A decorative graphic on the left side of the slide, featuring a grid of small red squares and dots of varying sizes, creating a textured, pixelated effect.
- What are R&D Tax Credits?
 - Who are RK Partners?
 - What activities qualify within Precision Optics?
 - How does the benefit actually work?
 - How did the OBBB affect RDTC?
 - Where do companies usually miss out on the benefit?
 - How can RK help you?

What are R&D Tax Credits?

High level

- 10% of qualifying costs back from the last 3 years
- Tax Credit Incentive designed to promote innovation and growth in the US
- Wages, contractors, materials/supplies, software
- Tax Credit looking forward or Tax Reimbursement looking retrospectively



Four-Part Test

Permitted Purpose

Intended to be useful in developing a new or improved product or process, relating to a business component's:

Functionality
Performance
Reliability
Quality

Technological in Nature

Fundamentally relies upon the principles of:

Engineering;
Physical Science;
Biological Science;

and/or

Computer Science

Technical Uncertainty

Activities must address uncertainty surrounding:

Capability of developing/improving the business component;

Methodology of developing / improving the business component;

The design of the business component

Process of Experimentation

A process designed to evaluate one or more alternatives to eliminate the uncertainty, such as:

Iterative Design Process;
Systematic Trial-and-Error;
Whiteboard;

and/or

Developing and testing of a new hypothesis

Who are RK Partners?

A bit about us

500+	\$100M+
CLAIMS COMPLETED	SECURED FOR CLIENTS
800+	0
BUSINESSES SERVED	AUDIT ADJUSTMENTS

What activities qualify within
Precision Optics?

What Qualifies? - Product & Process

- Have you created something new?
- Have you improved something that already exists?
- Do you ever have to ask – How do I do this? Or can I do this? This is methodology and capability uncertainty.
- Are you making your process more efficient/ less wastage/ incorporating new technology?



Qualifying Activities

Material Preparation & Substrate Development

Purpose: Create high-quality optical materials and blanks.

Produce and shape glass, crystal, or ceramic substrates.

Develop tooling and fixturing for delicate materials.

Measure homogeneity, purity, and refractive index.

Run trials to improve yield and dimensional accuracy.

Optic Fabrication and Finishing

Purpose: Turn blanks into precision optical components.

Grind, lap, and polish to required curvature and finish.

Test pad, slurry, pressure, and rotation combinations.

Design carriers for edge protection and stability.

Manage heat and stress during polishing.

Coating & Surface Engineering

Purpose: Enhance optical and environmental performance.

Apply anti-reflective, dielectric, or metallic coatings.

Control deposition rate (speed at which coating is applied), temperature, and pressure.

Measure film thickness, reflectivity, and durability.

Prepare and clean surfaces for optimal adhesion.

Assembly, Alignment & Testing

Purpose: Build and qualify complete optical systems.

Position and bond components within housings.

Perform optical and environmental/real world testing.

Establish repeatable alignment procedures.

Evaluate system data to improve reliability.

How does the benefit actually
work?

20 person company - Example

W2s

1 design
3 sales
4 engineers
7 in production
2 in QC
3 admin/accounts/HR

Total qualifying wages of \$1,000,000 a year

Approximate company benefit of \$40,000
(40% QREs)

1099s | Materials | Software

Software (eg. AutoCAD) - \$100,000

Approximate benefit of \$1,500 (15% QREs)

1099s - \$200,000

Approximate benefit of \$3,000 (15% QREs)

Materials - \$2,000,000

Approximate benefit of \$20,000 (10% QREs)

Total Benefit

W2 @ 40% QRE = \$40,000

Software Licences @ 15% QRE = \$1,500

1099s @ 15% QRE = \$3,000

Materials @ 10% QRE = \$20,000

Total = \$64,500 / year

**Three year lookback + Current Year =
\$258,000 in Total Benefit**

How did OBBB effect
RDTC?

Overview - Section 174 - Then vs. Now

Period	Treatment of R&D Costs
Prior to 2022 (pre-TCJA)	Immediate expensing allowed
2022-2024 (post-TCJA)	5-year amortization required for domestic expenses, 15-year amortization for foreign expenses
2025 onwards (OBBA)	Immediate expensing restored for US R&D
Optional Retroactive Relief	Small businesses ($\leq$ \$31M average gross receipts) may elect to fully expense prior unamortized costs during 2022-2024

Where do companies usually
miss out on the benefit?

What do we usually see?

- People who are using this typically miss out on a lot of relevant costs
- Claiming just on engineers or R&D Department
- Not claiming on the relevant material wastage/ scrap/ prototype
- Thinking that it has to be pure first of it's kind research – day to day work usually qualifies



How can RK help you?

What our Clients say...

A successful partnership from the first phone call... We have worked with RK Partners for 2 years on our R&D Tax Credit Analysis.

Their professionalism, expertise, attention to detail and most importantly interpersonal skills made the entire process smooth and successful. It has been a real pleasure working with them and we look ahead to continued success together.



HAYXA ESCOBAR
CFO – GABLES ENGINEERING

"RK Partners did a great job of finding all qualifying R&D work in my business and documenting it professionally. We were also able to find current work that will qualify for our claim next year, so I look forward to working with them in the future! I would recommend using RK Partners to look into your current process, they have very specialist people over there that will make sure you get the best possible benefit within the regulations"



MARK HESS
OWNER – E.R. PRECISION OPTICS

"BioXtek has partnered with RK Partners for several years to manage our R&D tax credit claims, and their expertise has been instrumental in our success. As a startup that has scaled significantly, we've relied on RK Partners to establish and maintain a robust, compliant process for capturing R&D tax credits.

Their proactive guidance ensured we implemented effective systems early on, allowing us to maximize eligible credits while seamlessly adapting to our growth. RK Partners' deep knowledge, reliability, and commitment to our success make them an invaluable partner. We highly recommend their services to any organization seeking to optimize their R&D tax credit claims with confidence and efficiency."



DR. BRUCE WEBER
CEO, BIOXTEK

"We've been working with R&K Partners for over three years on our R&D tax credit analysis, and the experience has been consistently excellent, hands on, and professional. As a tech startup, it's rare to find partners who combine deep technical expertise with world-class responsiveness; R&K delivers on all fronts.

With recent changes in legislation, R&D tax credits are more important than ever, and having a trusted, knowledgeable team in your corner makes all the difference. I highly recommend them to any enterprise: from startups to bonafide enterprises."



CHENG WANG
CFO, AKASH

"We have been working with RK Partners for a few years now on the R&D Tax Credits, having worked with another specialist provider before. One thing that stood out is RK's knowledge of the agricultural space: they understand the work that we do and are clearly experts in the sector.

The result is that we have had a more substantial benefit year on year, which has been very helpful! They have also been great at working with our CPA throughout the process – saves us time, for sure! I would recommend the team at RK to anyone in the poultry sector looking to do an R&D Tax Credit claim!"



STEVE REIER
OWNER, MINNICH EGGS

"I appreciate the work that RK did to help me identify and work through my farm R&D tax credit. The team did a great job of helping me identify the information they needed and putting it all together.

Great communication through the whole process which helped me have confidence in the process.



PAUL WINDEMULLER
OWNER, DREAM WINDS DAIRY, LLC

Results for our Clients

A food & beverage company secured **\$5.7M**

Tested feed ingredients and environmental controls to improve production efficiency and quality.

A wean-to-finish pig farm secured **\$2.9M**

Formulated and tested experimental diets to optimize growth and carcass quality.

A supplement manufacturer secured **\$1.12M**

We helped increase their claim from \$120K to over \$1.12M by uncovering overlooked qualifying activities.

A custom avionics controls company secured **\$685K**

Designed and manufactured control panel technology.

A dairy farm secured **\$508K**

Formulated and tested experimental rations to improve milk product quality.

A terpenes company secured **\$580K**

Formulated and tested new terpene blends to achieve specific sensory profiles, purity, and shelf-life stability.

A chemical manufacturing company secured **\$680K**

Custom formulations and proprietary extraction techniques.

A custom manufacturing firm secured **\$95K**

Designing and testing new custom-engineered equipment.

An aquaculture oyster company secured **\$91K**

Trialing grow-out methods; shell morphology optimization; biofouling mitigation trials; water quality testing; evaluation of broodstock, seed strains, and stock densities.

A shellfish agriculture operation secured **\$85K**

Shellfish sorting & packing process improvements.

A software/cybersecurity firm secured **\$441K**

Developed proprietary threat detection software.

A blockchain/crypto platform company secured **\$400K**

Design and development of blockchain for data storage.

An agriculture seed company secured **\$360K**

Selective breeding including phenotype evaluation, genotypic analysis, and parent selection.

An optical engineering firm secured **\$113K**

Growing materials for optical lenses and windows and developing improved lenses via novel CNC profiling.

A tradeshow display company secured **\$300K**

Designing custom, modular tradeshow displays using engineering and material science principles.



Sam Wooldridge

SENIOR PARTNER

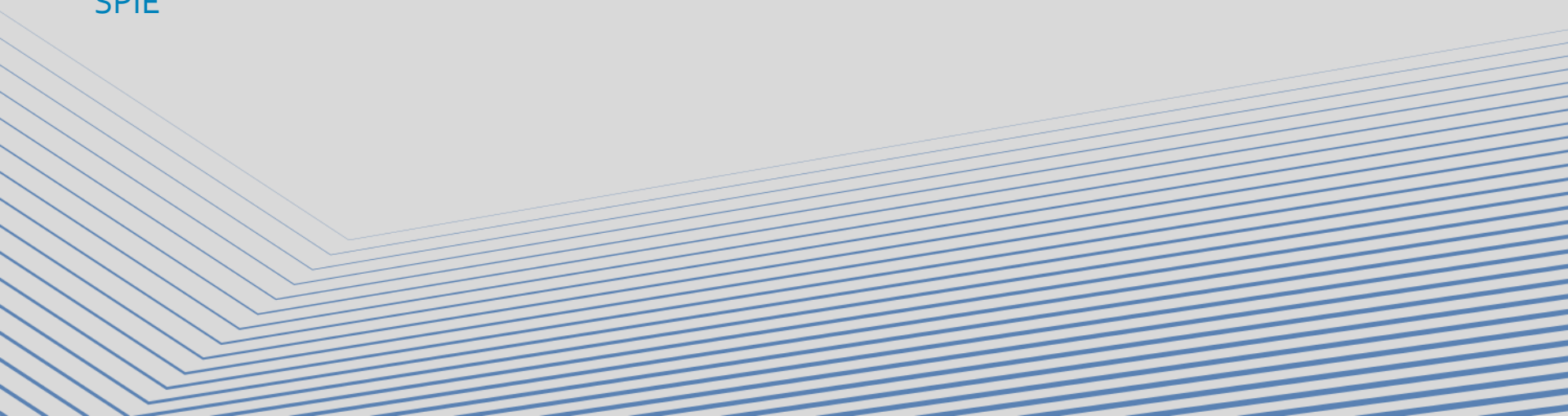
swooldridge@rk.partners

929 713 3760

rk.partners

SPIE - Optifab

Caleb Kline
SPIE



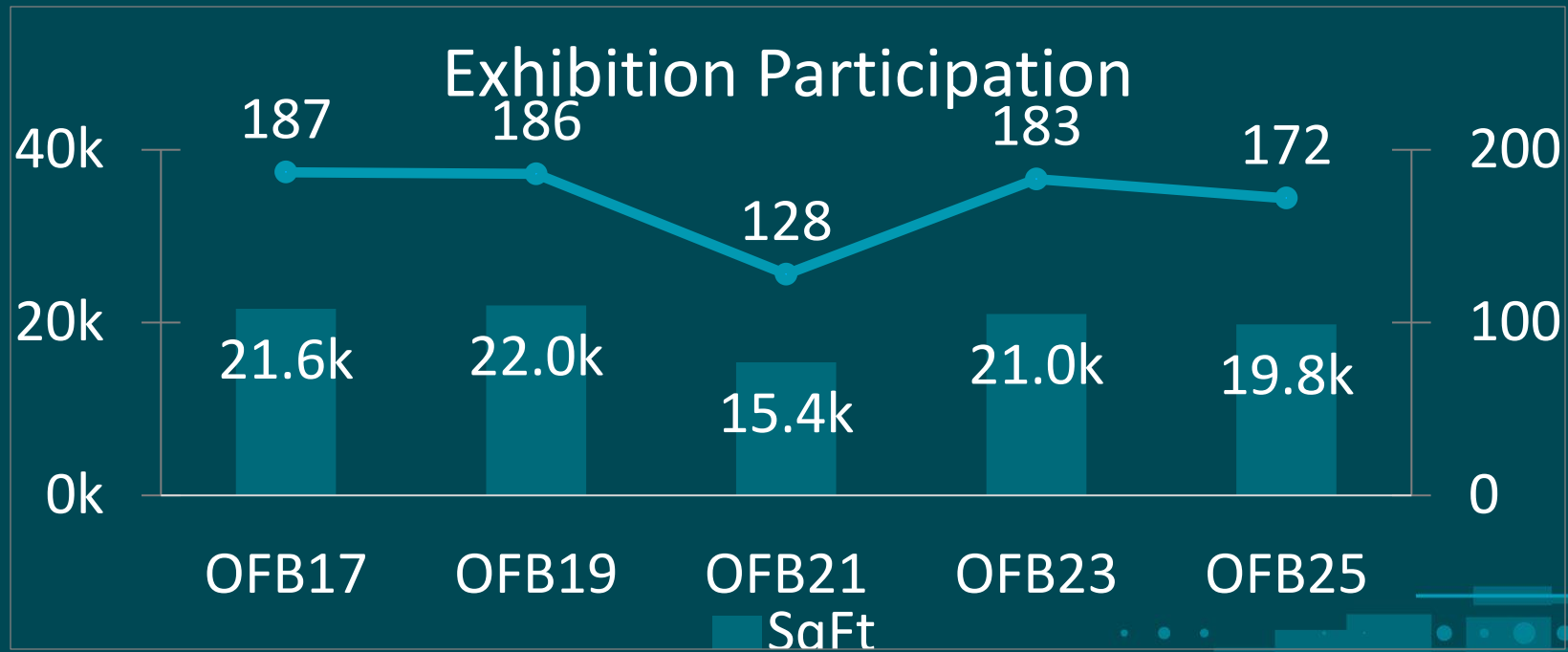
SPIE Update

APOMA General Meeting Optifab 2025

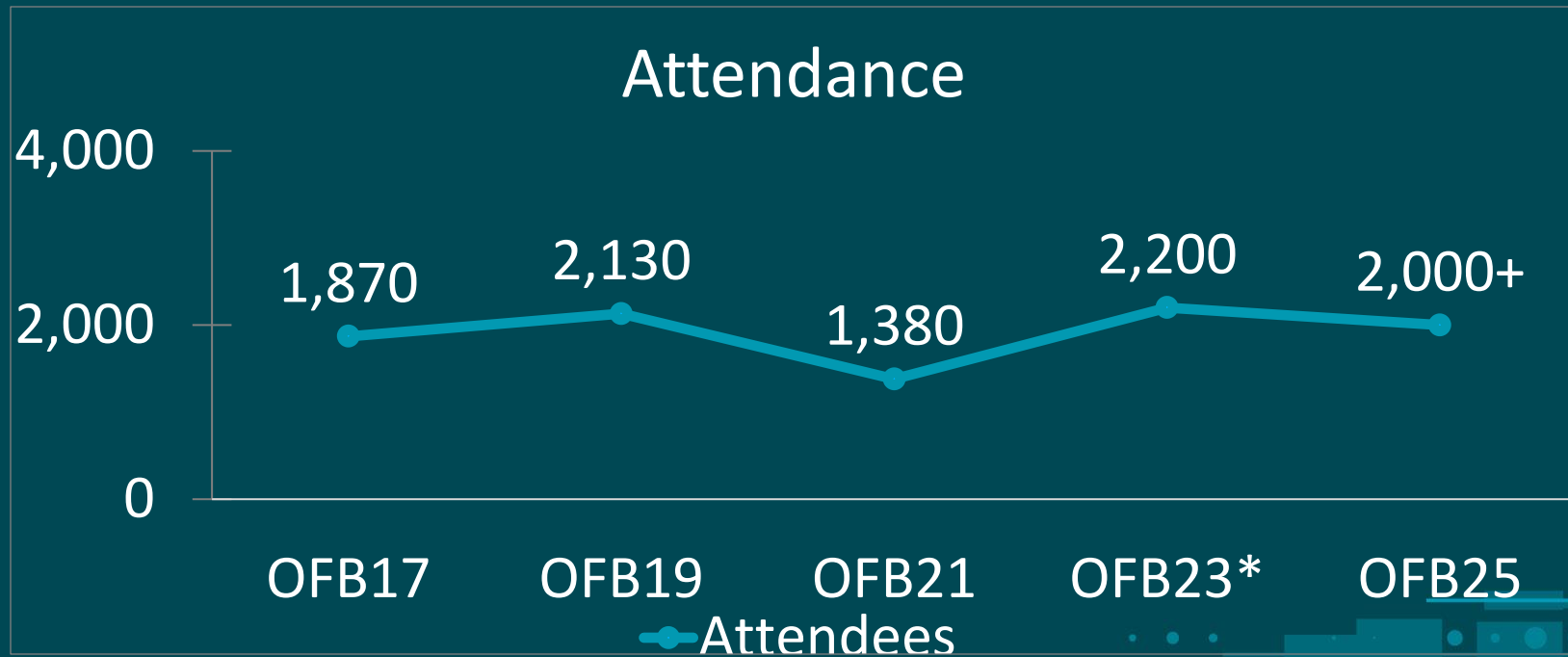
Presented by Caleb Klein, Event Manager
Email: calebk@spie.org



SPIE.OPTIFAB



SPIE.OPTIFAB



**adjusted to exclude student day participants under 18*

SPIE.OPTIFAB

Estimated Registrations: 2000+

- Conf/Course Attendees: **250+**
- Exhibit Visitors: **1000+**
^excludes student day participants under 18
- Exhibit Reps: **750+**

*Optifab 2025 is welcoming ~300 students from MCC and local High Schools on Thursday for **Optifab Student Day***

***UofR Industrial Associates** program is co-located on Thursday, welcoming **400+** program participants*

SPIE.OPTIFAB

Courses Program

- Scheduled: **14 (+5)**
- Total Registrations: **180+ (+20)**
- Avg Reg per Course: **13**

Do you have a course topic you would like to see included?

Are you or someone you know interested in teaching a course?

Contact **education@spie.org** to learn how.

SPIE.OPTIFAB



SPIE. LASER DAMAGE

+150 attendees
+3 days of shared, simultaneous
technical content
Highly compatible technical
areas and topics

SPIE Optifab sponsors. Thank you for your support!



SPIE. **PHOTONICS WEST**

**BIOS
EXPO**

Part of **SPIE Photonics West**

**QUANTUM
WEST EXPO**

Part of **SPIE Photonics West**

**VISION
TECH EXPO**

Part of **SPIE Photonics West**

**AR|VR|MR
EXPO**

Part of **SPIE Photonics West**

SPIE.

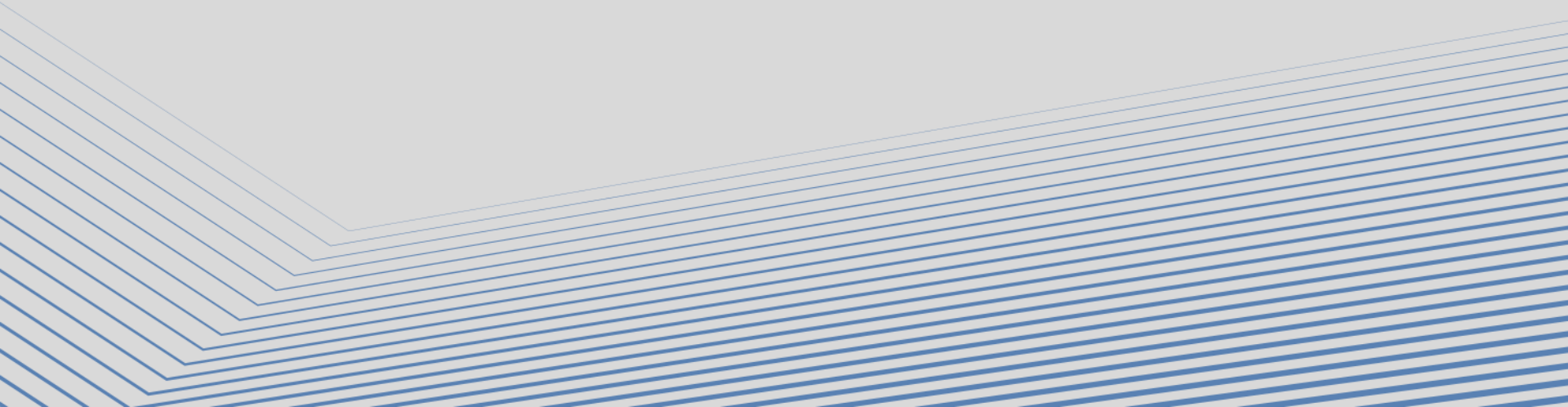
The international society for optics and photonics



Workforce Development

Alexis Vogt, PhD

MONROE COMMUNITY COLLEGE

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OPTICS MANUFACTURING TECHNICIAN APPRENTICESHIP

- **Structured “earn and learn” solution**
 - 2,000 hours/year
 - Customizable program to meet your manufacturing process
- **Related technical instruction**
 - Minimum 144 hours/year
- **Apprentices work in various departments learning manufacturing processes**



OPTICS MANUFACTURING TECHNICIAN APPRENTICESHIP

- **Benefits to Employers**

- Highly skilled workforce
- Increased employee retention
- Improved attendance, productivity, and quality

- **Benefits to Apprentices**

- Long-term career opportunities
- Workplace relevant skills
- Industry recognized credentials
- Earn academic credit



ROI **\$1.47** for every \$1 invested from increased productivity, reduced waste, and increased innovation

Every \$1 invested in apprenticeships leads to a public return of approximately **\$28** in benefits

<https://nationalapprenticeship.org/roi>

CURRENT STATE OF MCC APPRENTICESHIP ENGAGEMENT

- **14** approved company sponsors of registered optics apprenticeships, across **8** states
- **22** active optics apprentices at **8** companies in **4** states
- **20** apprentices (**5 female**) have completed registered optics apprenticeships

MCC is now engaged in registered apprenticeship programs for 4 different optics occupations with 2 additional programs, for diamond turning technician & optical coating technician, in the planning phase.

- Precision Optics Manufacturing Technician (MD, NY)
 - Optics Manufacturing Technician (US)
 - Precision Imaging/Nanolithography Technician (NY)
 - Industrial Manufacturing Technician (PA)
- **7** non-apprentice, remote students, employed at **4** companies in **4** states
- (AR, CT, MA, MS)

APPRENTICESHIP PARTNERS

Structured earn & learn program: on the job training + related technical instruction



Seeking additional optics companies!



AMERICAN
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APOMA 2026 Technical Conference

Presented by Timothy Paul Kennedy

Oct. 22nd 2025



APOMA 2026 Technical Conference

Dates: October 27th – 29th, 2026

Location: Near The Kennedy Space Center, Florida

Join us for an exciting gathering of optics professionals, innovators, and leaders!

Kick off the event with an **Opening Reception** on the evening of **October 26th**.

Conference Highlights

- **October 27–28:** Two full days of **informative technical and business talks** designed to foster learning, collaboration, and innovation across the optics community.
- **Networking Opportunities:** Connect with industry peers, share insights, and explore new partnerships.
- **Engaging Sessions:** Presentations and panels led by experts from across the field of precision optics manufacturing.





Special Event & Call to Action

October 29: Experience a **private half-day tour of the Kennedy Space Center** – an inspiring opportunity to see innovation in action!

We are now **calling for technical speakers and sponsors** to help finalize the details and agenda.

Mark your calendars now!

For participation and sponsorship inquiries, contact APOMA today.

Thank you to Mitzi Brennan for the
great chocolate chip cookies!



UPCOMING EVENTS

Jan. 20-22, 2026

SPIE. PHOTONICS
WEST

Moscone Convention
Center

San Francisco, CA

Apr. 26-30, 2026

SPIE. DEFENSE+
SECURITY

Gaylord National
Resort & Convention
Center

National Harbor,
Maryland

July 16, 2026

OptiPro Presents



Victor Hills Golf Club

Rochester, NY

Thank you and enjoy Optifab!

