

William J. Collins



Bill Collins is a founder of Ocutronics and the company's Chief Executive Officer and Director of Engineering. Ocutronics is Bill's fifth endeavor in building a company from an intellectual property entity to a fully evolved manufacturer of technology products.

Bill is a serial entrepreneur, innovator and consummate engineer, Bill holds 13 patents for electro-mechanical, electro-optical, optical and illumination systems, often devices that have assisted in life threatening emergencies and positively impacted the quality of life for others.

Collins Electro Optics Inc. pioneered state-of-the-art high power lighting systems for emergency services nationwide. The company and technology was purchased by The Coleman Corporation who innovated a complete line of consumer lighting products centered around Collins technology. Collins Dynamics' products continue to be a critical asset for providing life saving performance to first responders, the fire, police, search & rescue and federal agencies that bravely serve our nation .

Collins Engineering, a diversified contract engineering firm, developed proprietary products and systems for leading edge technology companies across the U.S., including Havis & Shields Inc., a star player in fire, police and search & rescue systems and vehicles.

At Star-Laser, Bill created a high power xenon arc illumination system with high efficiency and lightweight cooling, allowing the motion control system to move the optical assembly with unprecedented acceleration and velocity

Collins Lighting Systems Inc., manufactured a series of innovative, proprietary commercial lighting products. The compact size and high luminous output of the CLS line led to the

development of a product variant for use on fire equipment for wide area emergency scene illumination.

Collins Electro Optics Inc., pioneered a miniature image intensified optical instrument system with high value ground-breaking performance. The Collins Electro Optics developed systems have been used by NASA on the world's largest telescopes and for detection of near earth objects. Collins Electro Optics devices have diverse applications from microscopy to stray neutron detection and beyond at some of the worlds foremost technologically sophisticated facilities including Fermilab.

Through Collins Electro Optics, Bill met and began working with Dr. Bob Levine to develop the landmark Ocutronics' retinal imaging camera. This highly disruptive technological marvel will create a paradigm shift in how high resolution retinal imaging is undertaken and analyzed. The ability to detect early stage vascular anomalies in the human retina will resonate worldwide among health care professionals and contribute to the elimination of blindness due to diabetic retinopathy at home and across the globe.

When Bill is not busy inventing, you might find him hiking in and photographing the back country of Colorado or mountain biking along a scenic trail. Bill has made strength and fitness a lifelong pursuit. As a pilot since his teen years, Bill has had the opportunity to have flown a number of high performance aircraft. Bill is passionate about giving to children's charities and is the proud father of three great kids.

Professional Resume of William J. Collins

2000 to Present *Co-Founder, Principal, Engineering Director, CEO Ocutronics LLC*

- ❖ Co-founded Ocutronics with Robert E. Levine M.D., a prominent board certified Ophthalmologist, known worldwide for pioneering surgical procedures and methods. Clinical Professor of Ophthalmology at the University of Southern California School of Medicine
- ❖ Developed disruptive technology for a new retinal camera that uses optical polarization techniques unlike any current retinal cameras. Created Mueller matrix validated polarization models with Stokes vector illustrations for patent.
- ❖ Designed and developed 3 prototype cameras using AutoCAD for engineering drawings and documentation of all components, including all fabricated metal and optical components.
- ❖ Designed optical components using Zemax, a robust optical engineering software package. Created numerous computer generated optical performance models. Optimized design with outside engineering consultant using super-computer generated damped least squares algorithm.
- ❖ Interfaced with numerous vendors for prototype components.
- ❖ Created all patent drawings and wrote abstract and descriptive copy. Co-wrote patent claims with Dr. Levine.
- ❖ Developed biometric prototype of retinal camera for secure retinal identification.
- ❖ Completing final pre-production prototype of retinal camera.

- ❖ Spearheading the device regulatory process with Reglera LLC for FDA 510(k) submission and compliance.

U.S. Patent 7,290,822 Issued November 6, 2007, Foreign Patents in England, France and Germany
All patents link to US Patent and Trademark Office records.

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=6&f=G&l=50&col=AND&d=PTXT&s1=7,290,882&OS=7,290,882&RS=7,290,882>

1997 to Present *Founder, Principal, CEO Collins Electro Optics*

Collins Electro Optics website: <http://www.ceoptics.com/>

- ❖ Developed prototype Generation 3 image intensified optical system for use on telescopes, microscopes and other scientific instruments.
- ❖ Wrote patent copy and claims.
- ❖ Developed production methodology for the complete “I Cubed” image intensification system for use on telescopes and other optical systems.
- ❖ Designed and produced all advertising, copy and images for publication.
- ❖ I Cubed system voted one of “Top 25 New Products” for Sky & Telescope magazine in 1999.
- ❖ Received U.S. State Department Office of Defense Trade Controls export permit for I Cubed Generation 3 image intensified optical system.
- ❖ Worked with NASA to adapt the Intensified optical system for use on the 120” IRTF and Keck telescopes on Mauna Kea, Hawaii.
- ❖ Supplied instruments to: Fermilab, Institute Max Von Laue in France for neutron detection, Boeing, Walter Reed Army Hospital, and the Tokamak fusion project along with other prominent end users.

U.S. Patent: 6,326,604 Issued December 4, 2001

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=5&f=G&l=50&col=AND&d=PTXT&s1=6326604&OS=6326604&RS=6326604>

SPIE Co-authored paper February 2, 2003

http://spie.org/x648.html?product_id=450854&origin_id=x1636&Search_Results_URL=http://spie.org/x1636.xml&Search_Origin=ResearchSearch&category=ResearchPapers&isResearch=true&UseJavaScript=1&Please_Wait_URL=http://spie.org/x18503.xml&authors_editors=William%20J%20Collins&boolean_filter=All&month_from=1&year_from=2000&month_to=1&year_to=2006

1990 to 1997 *Co-founder, Principal, President, Collins Lighting Systems Inc.*

- ❖ Developed new series of compact architectural lighting products with precision beam control to greatly reduce light pollution in urban environments.
- ❖ Implemented full contract manufacturing program which eliminated the capital cost necessary for in house production.
- ❖ Worked with Underwriters Laboratories and Edison Testing Laboratories. Received safety certification for product line.

- ❖ Patented ER-2000 series UL listed as smallest 1-kilowatt luminaire.
- ❖ Contracted with Havis-Shields Equipment Company for production of ER-2000 series for use on emergency and military vehicles.
- ❖ Pioneered the use of precision 1 piece aluminum extrusions combined with die castings and high temperature stable components to produce very compact, high output luminaires.
- ❖ Developed a complete quality assurance program, incorporating statistical process control for production engineering.
- ❖ Redesigned and reengineered 205 large decorative luminaires for the Downtown Denver Business Improvement District, 16th Street pedestrian mall. Lights were originally designed by I.M. Pei.
- ❖ Replaced halogen design with optimized metal optic and H.I.D. lamp.
- ❖ Replaced filament decorative lamp design with cold mirror directed, optically coupled fiber optic output.
- ❖ The improvements in the luminaires saves the City of Denver thousands annually in electrical costs.

U.S. Patent: 5,154,507 Issued October 13, 1992

<http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F5154507>

U.S. Patent D344,812 Issued March 3, 1994

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-adv.htm&r=7&f=G&l=50&d=PTXT&S1=%22Collins%3B+William+J%22&OS=%22Collins;+William+J%22&RS=%22Collins;+William+J%22>

1988 To 1990 *Co-founder, Principal, Engineering Director, Star Laser Inc.*

- ❖ Developed 4 kilowatt xenon arc lighting system from concept to completion of prototype in 1 year, without electronic drafting (AutoCAD)
- ❖ Designed large (24') metal optics for (2) 2-kilowatt Optical Radiation Corporation xenon arc lamps.
- ❖ Designed user adjustable 2 axis motion control system for rapid lamp movement.
- ❖ Designed lightweight high velocity cooling system for lamps.
- ❖ Designed high switching frequency dc to dc MOSFET transistor power supply for high speed (18,000 rpm) cooling fans.
- ❖ Designed complete 4.5 kilowatt current limited, filtered power supply for Xe lamps.
- ❖ Designed 30-kilovolt series igniter circuit for Xe lamps.
- ❖ Designed motion control system to lift lamp assemblies from transport trailer before operation.
- ❖ Developed 4 kilowatt xenon arc lighting system from concept to completion of prototype in 1 year, without electronic drafting (AutoCAD)
- ❖ Designed large (24') metal optics for (2) 2-kilowatt Optical Radiation Corporation xenon arc lamps.
- ❖ Designed user adjustable 2 axis motion control system for rapid lamp movement.
- ❖ Designed lightweight high velocity cooling system for lamps.
- ❖ Designed high switching frequency dc to dc MOSFET transistor power supply for high speed (18,000 rpm) cooling fans.
- ❖ Designed complete 4.5 kilowatt current limited, filtered power supply for Xe lamps.
- ❖ Designed 30-kilovolt series igniter circuit for Xe lamps.
- ❖ Designed motion control system to lift lamp assemblies from transport trailer before operation.

- ❖ Developed complete in-house manufacturing program.
- ❖ Developed quality assurance program, linked with vendors.

U.S. Patent 4,935,853 Issued June 19, 1990

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=20&f=G&l=50&co1=AND&d=PTXT&s1=4,935,853&OS=4,935,853&RS=4,935,853>

1988 To 2005 **Founder, President, Collins Engineering**

- ❖ Contract engineering concept and development of a Peltier effect cooling system for determining freezing point of roadway surface.

U.S. Patent 5,745,051 Issued April 28, 1998

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=28&f=G&l=50&co1=AND&d=PTXT&s1=5,745,051&OS=5,745,051&RS=5,745,051>

U.S. Patent 5,619,193 Issued April 8, 1997

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=5,619,193.PN.&OS=PN/5,619,193&RS=PN/5,619,193>

- ❖ Contract engineering concept and development of a fiber optic light engine for Supervision International.

U.S. Patent 5,528,714 Issued June 18, 1996

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=5,528,714.PN.&OS=PN/5,528,714&RS=PN/5,528,714>

1978 To 1988 **Founder, President, Collins Dynamics Inc.**

- ❖ Created first prototype optical device for improved performance halogen lighting system.
- ❖ Designed and developed spun aluminum metal optic for dual halogen lamp.
- ❖ Designed and developed first high temperature resistant thermoplastic lamp holder for dual halogen lamps.
- ❖ Began manufacture of the CL-12 Professional Series of fixed mount halogen lighting products for emergency services vehicle mounted applications for first responders (fire, police, search and rescue).
- ❖ Expanded product line to include the CD-12 series, a battery operated portable version.

- ❖ Created the "Magnum" hand held searchlight the first product of its kind worldwide with lab certified One Million candlepower output.
- ❖ Made it possible for first responders using Collins Dynamics lights to dramatically extend their night visual range to quickly identify people in life threatening situations that were beyond the range of conventional lighting products.
- ❖ 1983, Collins Dynamics acquired by the Coleman Corporation for 2.5 million dollars in cash and royalties.
- ❖ Collins Dynamics becomes part of the "Associated Products Division" of Coleman, led by Harvard MBA Tom Talbot.
- ❖ Appointed Director of Product Development for Collins Dynamics by Coleman management.
- ❖ Product line further expanded to Federal Government end users. To extend the reach of nighttime operations, helping to protect U.S. citizens.
- ❖ Developed "Special Products" for U.S. Secret Service, Presidential Protection Division.
- ❖ Designed and developed a low cost series of products for consumers, featuring performance rivaling the professional series of Collins Dynamics products.
- ❖ Assisted the design effort on integration of aesthetic features for the consumer product line.
- ❖ Designed more than 50 engineering thermoplastic components, creating a lower cost series based on the Collins Dynamics Professional Series.
- ❖ Collins Dynamics products are still in production, a 25+ year product life cycle!

U.S. Patent 4,755,916 Issued July 5, 1988

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahhtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=4,755,916.PN.&OS=PN/4,755,916&RS=PN/4,755,916>

U.S. Patent 4,612,609 Issued September 16, 1986

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahhtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=4,612,609.PN.&OS=PN/4,612,609&RS=PN/4,612,609>

U.S. Patent 4,587,601 Issued May 6, 1986

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahhtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=4,587,601.PN.&OS=PN/4,587,601&RS=PN/4,587,601>

U.S. Patent 4,586,117 Issued April 29, 1986

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahhtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=4,586,117.PN.&OS=PN/4,586,117&RS=PN/4,586,117>

U.S. Patent 4,502,103 Issued February 26, 1985

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnethtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&col=AND&d=PTXT&s1=4,502,103.PN.&OS=PN/4,502,103&RS=PN/4,502,103>