LINEAGE
CELL THERAPEUTICS

The future of cell therapy.



Corporate Overview

November 10, 2020

Forward-Looking Statements

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All statements in this presentation, other than statements of historical fact, are forward-looking statements within the meaning of federal securities laws. In some cases, you can identify forward-looking statements by terms such as "may," "will," "expect," "plan," "anticipate," "strategy," "designed," "could," "intend," "believe," "estimate," "target," or "potential" and other similar expressions, or the negative of these terms. Forward-looking statements involve risks, uncertainties and assumptions that may cause Lineage's actual results, performance, or achievements to be materially different from those expressed or implied by the forward-looking statements in this presentation, including risks and uncertainties inherent in Lineage's business and other risks described in Lineage's filings with the Securities and Exchange Commission (SEC). Lineage's forward-looking statements are based upon its current expectations and involve assumptions that may never materialize or may prove to be incorrect. All forward-looking statements are expressly qualified in their entirety by these cautionary statements. Further information regarding these and other risks is included under the heading "Risk Factors" in Lineage's periodic reports filed with the SEC, including Lineage's Annual Report on Form 10-K filed with the SEC on March 12, 2020 and its other reports, which are available from the SEC's website. You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they were made. Lineage undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as required by law.

Management Biographies

BRIAN CULLEY, CEO

Mr. Culley joined Lineage as CEO in September 2018. Prior to joining Lineage, Mr. Culley served from August 2017 to September 17, 2018 as Interim Chief Executive Officer at Artemis Therapeutics, Inc., a, where he was responsible for the management of the company. Mr. Culley previously served as Chief Executive Officer of Mast Therapeutics, Inc. ("Mast"), from February 2010, and was also a member of its Board of Directors from December 2011, until Mast's merger with Savara, Inc. in April 2017. Mr. Culley served from January 2007 to February 2010 as Mast's Chief Business Officer and Senior Vice President, from February 2006 to January 2007 as Mast's Senior Vice President, Business Development, and from December 2004 to February 2006 as Mast's Vice President, Business Development. From 2002 until 2004, Mr. Culley was Director of Business Development and Marketing for Immusol, Inc. From 1999 until 2000, he worked at the University of California, San Diego (UCSD) Department of Technology Transfer & Intellectual Property Services and from 1996 to 1999 he conducted drug development research for Neurocrine Biosciences, Inc. Mr. Culley has more than 25 years of business and scientific experience in the life sciences industry. He received a B.S. in biology from Boston College, a masters in biochemistry and molecular biology from the University of California, Santa Barbara, and an M.B.A. from The Johnson School of Business at Cornell University.

BRANDI ROBERTS, CFO

Ms. Roberts joined Lineage as CFO in January 2019. Prior to joining Lineage, Ms. Roberts served from August 2017 to January 4, 2019 as Chief Financial Officer at REVA Medical, Inc. Ms. Roberts previously served as Chief Financial Officer at Mast Therapeutics, Inc., a publicly traded US-based biopharmaceutical company, from January 2013 to April 2017, having served as the Company's Senior Vice President, Finance from March 2011 to January 2013. Previously, she held senior positions at Alphatec Spine, Artes Medical, Stratagene and Pfizer. Ms. Roberts brings more than 23 years of public accounting and finance experience, including 20 years at publicly traded pharmaceutical, medical technology, and life science companies to her position. Ms. Roberts is a certified public accountant with the State of California and received her B.S. in Business Administration from the University of Arizona and her M.B.A. from the University of San Diego. Ms. Roberts serves on the board of Temple Therapeutics BV. She also currently serves as Chair of the Southern California Chapter of the Association of Bioscience Financial Officers.

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Lineage Cell Therapeutics – Investment Overview

Innovative Approach	Transplanting differentiated cells to treat a wide range of serious medical conditions
Unique Advantage	World-class expertise and IP; ability to manufacture an unlimited supply of pluripotent stem cells into specialized cell types
Three Clinical Stage Programs	OpRegen: Phase 1/2a in Dry Age-Related Macular Degeneration VAC2: Phase 1 in Non-Small Cell Lung Cancer OPC1: Phase 1/2a in Spinal Cord Injury
Compelling Data	- First reported finding of retinal tissue restoration in a dry AMD patient - 33% of spinal cord patients gained 2 or more levels of motor function - Potent induction of immune responses observed in Phase 1 study
Market Opportunities	Billion-dollar potential exists for all three clinical programs; significant areas of unmet medical need
Multiple Clinical Catalysts in 2020	- Completion of enrollment in the OpRegen Phase 1/2a study - OpRegen data update at AAO in November 2020
Strong Financial Position	- Cash and marketable securities of $38 million as of September 30, 2020

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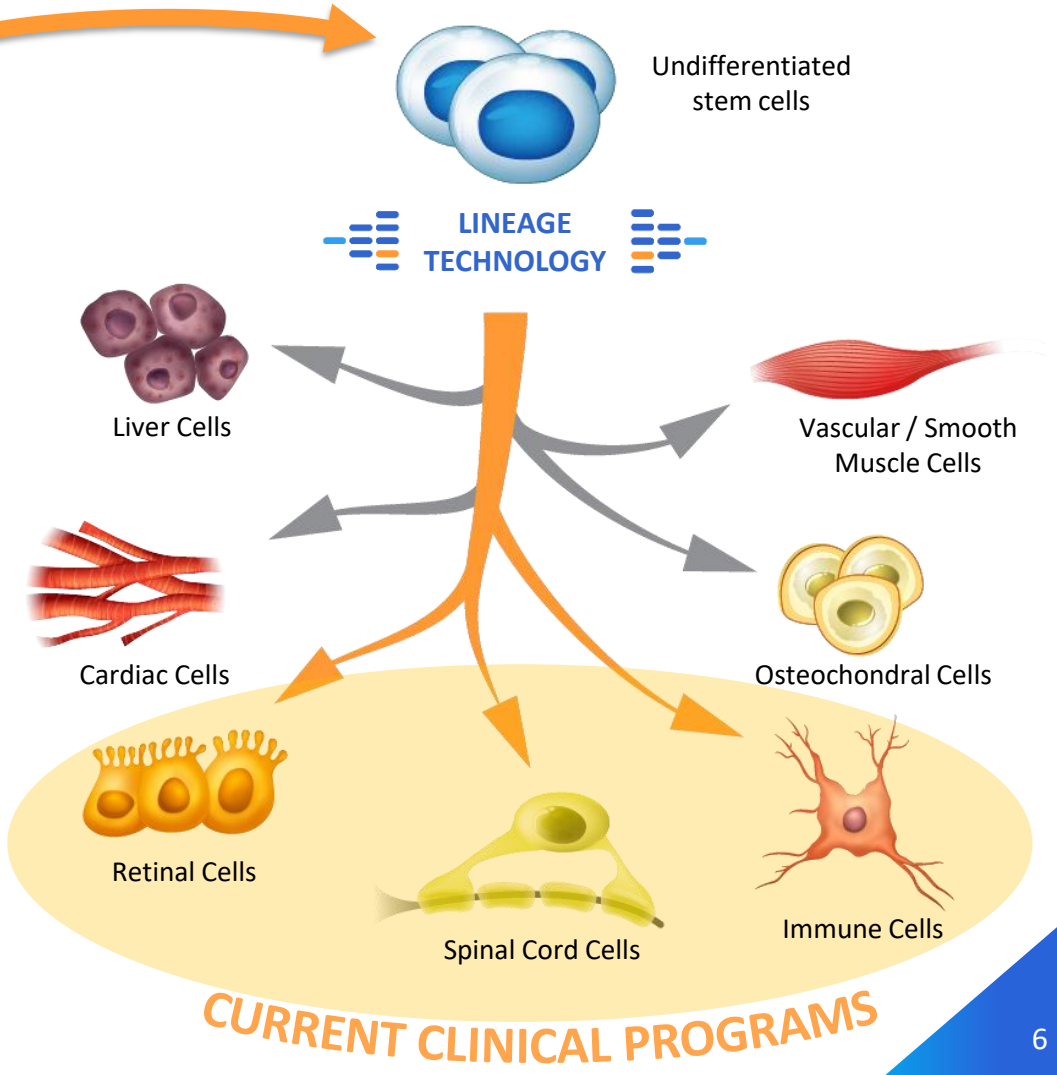
"We aim to pioneer a new branch of medicine, based on transplanting specific cell types into the body"

Technology Overview

Lineage Technology Platform

"Off-the-shelf" cell therapies to treat serious diseases and conditions

- **The Lineage Platform starts with a frozen vial of *self-renewing stem cells***
- **These unique cells can become *any* cell type in the body**
- **Lineage's proprietary processes create *only* the cell type which is desired**
- **No alterations are made to the cell's DNA**
- **Commercial-scale production occurs from a single vial of cells**



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In-House Manufacturing

Lineage's competitive advantage is the *differentiation* of an *unlimited* supply of pluripotent stem cells into specialized cell types

Capabilities

- Cell banking and handling
- Process development
- Manufacture of clinical trial material
- Scale-up in multi-liter bioreactors
- Multiple clean rooms for parallel GMP production runs

Facilities

Cell Cure Neurosciences
Subsidiary, Israel

Backed by hundreds of cell therapy-related patents

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Pipeline and Validating Partnerships

Clinical Programs	Financial Support Received	Phase 1	Phase 2a	Next Steps
OpRegen® (RPE Cells) Dry AMD with Geographic Atrophy (GA)	רשות החדשנות Israel Innovation Authority **$16M**	→		Complete enrollment by year end
OPC1 (Oligodendrocytes) Spinal Cord Injury (SCI)	CIRM CALIFORNIA'S STEM CELL AGENCY **$14M**	→	→	Trial complete, planning phase 2b/3
VAC2 (Dendritic Cells) Non-Small Cell Lung Cancer (NSCLC)	CANCER RESEARCH UK **$10M**	→		2 patients left to enroll

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AMD is the leading cause of irreversible vision loss in the US

Source: aao.org

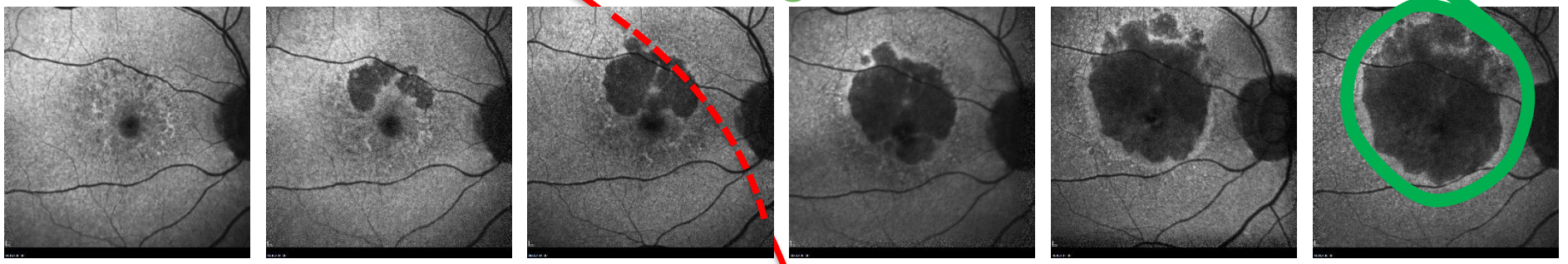
OpRegen®: Cell Therapy for Dry AMD

Dry AMD Can Lead Rapidly to Blindness

Visual acuity over time…

20/20 (normal)

The area of geographic atrophy or "GA" grows larger as retinal cells die



2012 2013 2014 2015 2017 2019

20/200 (legally blind in 3 years)

20/640

Dry AMD involves the progressive loss of retina cells, which can lead rapidly to blindness

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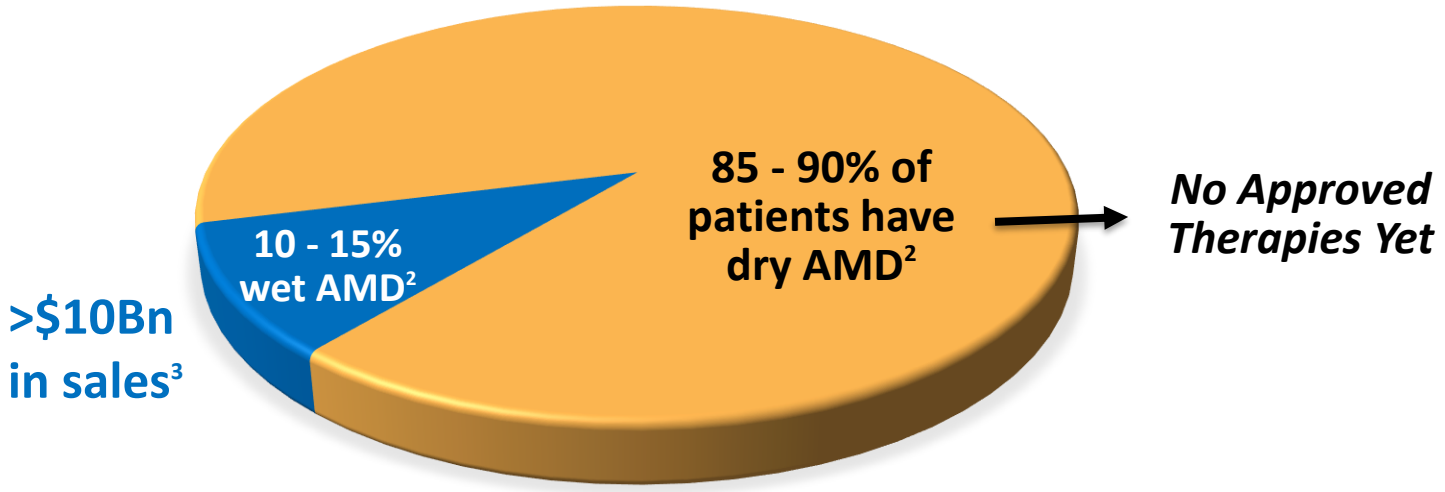
Multi-Billion Dollar Market Opportunity in the U.S.

Age-related Macular Degeneration (AMD) (all forms) afflicts ~11 million people in the United States

Type of AMD	% of AMD Cases	FDA Approved Therapies
Wet AMD	10 – 15%	Lucentis & Eylea ($10 Billion in annual sales)
Dry AMD	**85 – 90%**	**None**



Sources: (1) Bright Focus Foundation. Macular Degeneration Facts & Statistics: Bright Focus Foundation. http://www.brightfocus.org/macular/about/understanding/facts.html; (2) JM Seddon, Epidemiology of age-related macular degeneration. (AP Schachat, S Ryan eds.) Retina, 3rd ed. St. Louis, MO: Mosby; 2001;1039-50; (3) 2018 product sales summary based on publicly reported revenue figures for Lucentis and Eylea.

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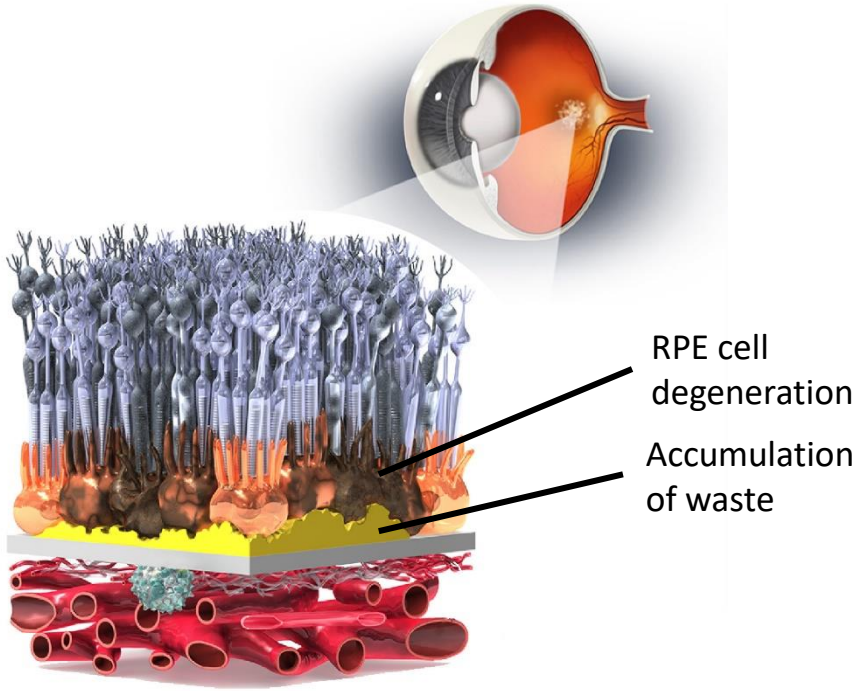
Lineage Approach – OpRegen, an RPE Cell Transplant

- **Dry AMD involves the loss of retina cells, creating an area of geographic atrophy (GA), which causes impaired vision and blindness**



- **OpRegen is a injection of RPE cells delivered to the retina, to replace lost retinal cells and preserve or improve vision**

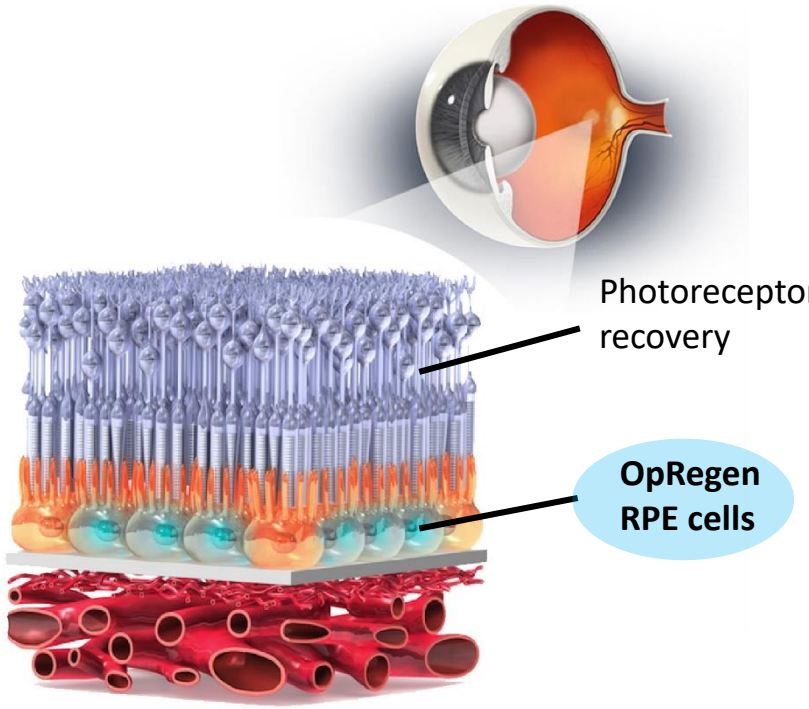
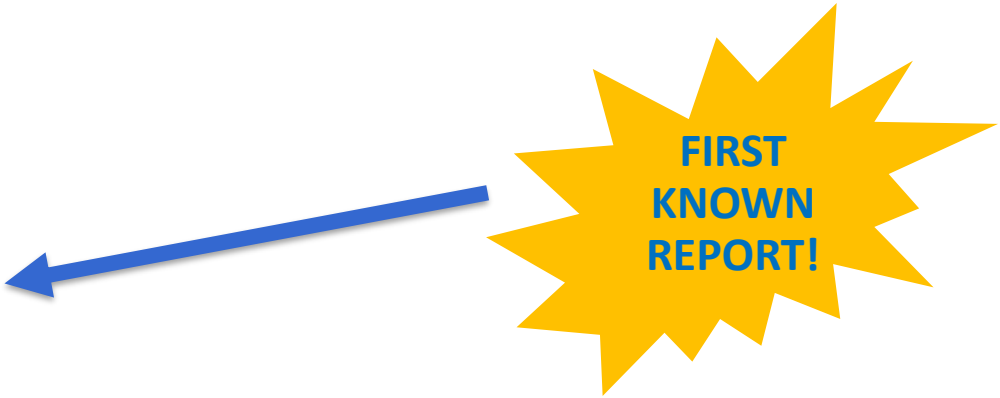


Image adapted from scienceofamd.org

Promising Results
(As of Sep. 14, 2020 Update)

- **The transplanted OpRegen cells have been well tolerated**
- **No reports of rejection of the transplanted cells or acute or delayed inflammation**
- **4 out of 5 "Cohort 4" patients (the intended commercial population) have better vision at their 1-year time point or as of their last available visit**
- **Encouraging findings across unrelated assessments - various patients have exhibited evidence for one or more of:**
  1. **Reduced growth of geographic atrophy**
  2. **Improved visual acuity**
  3. **Improved reading speed**
  4. **Improved retina structure**
  5. **Reductions in waste material**
  6. **Stable engraftment of cells**
  7. **Restoration of retinal tissue**



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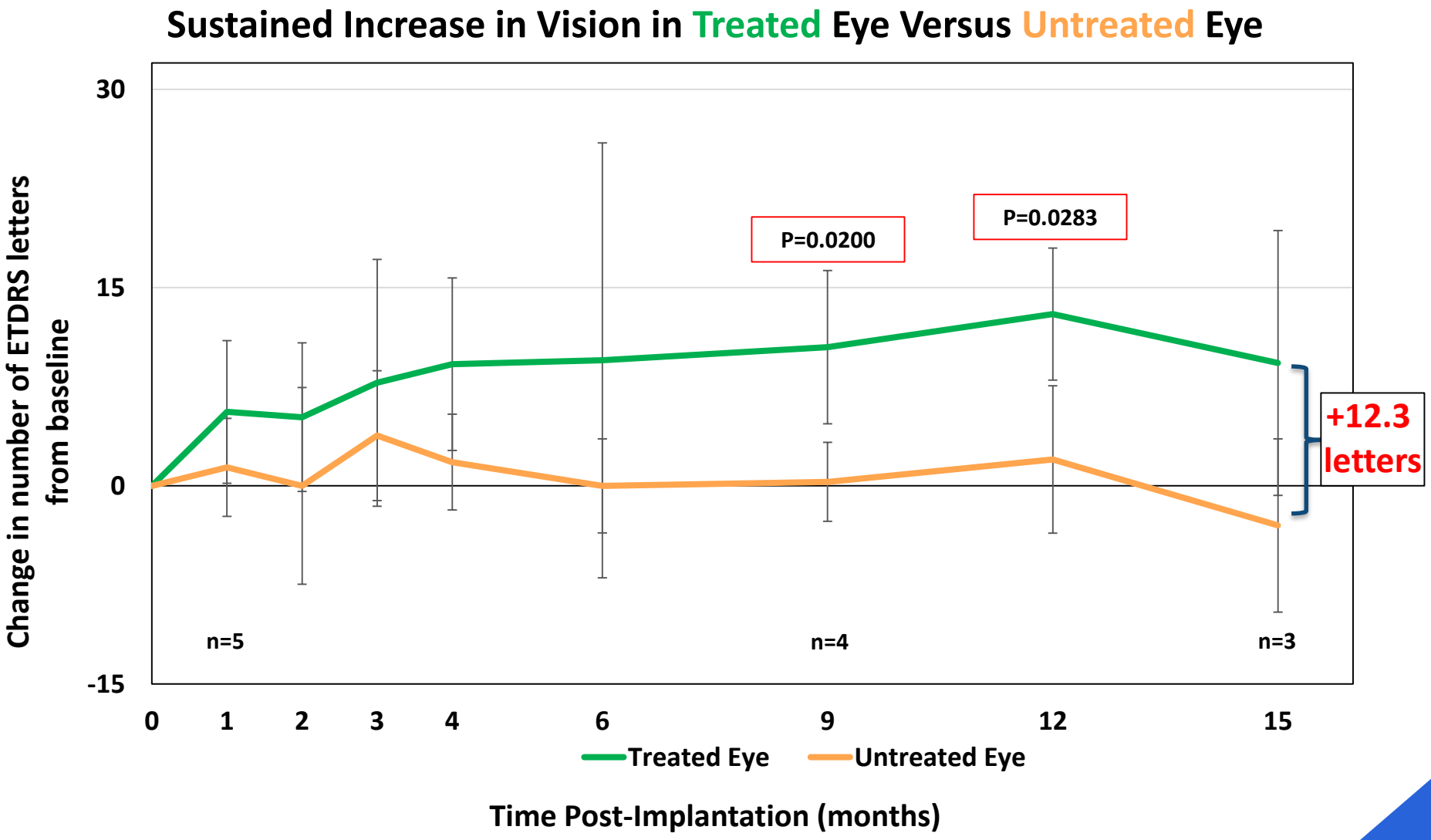
Data presented at 2020 ARVO Virtual Meeting

Cohort 4 (Better Vision) Patients – Improved Visual Acuity

(As of ARVO May 2020 Update)



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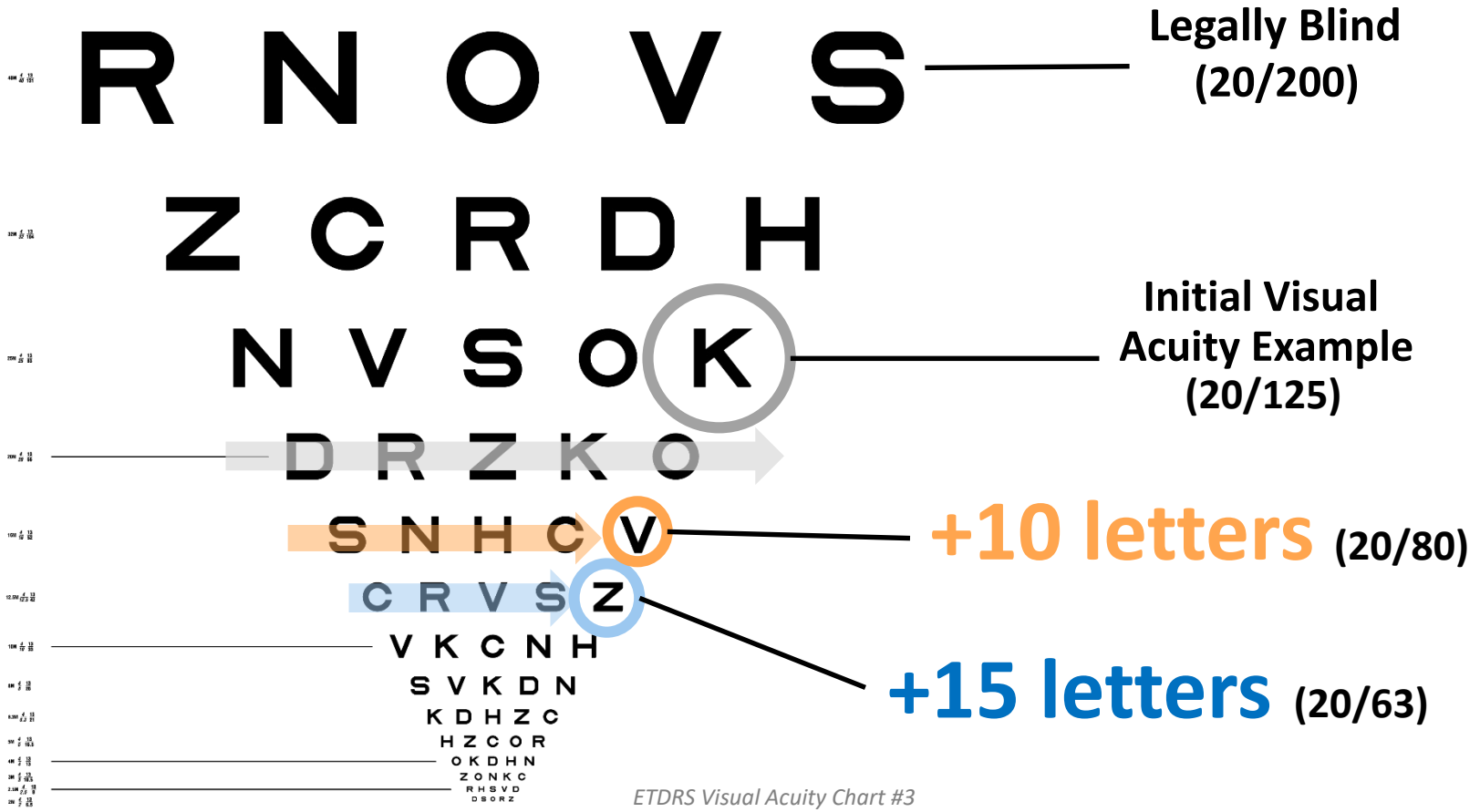
Data presented at 2020 ARVO Virtual Meeting

Real-World “Letters of Improvement”



ETDRS Visual Acuity Chart #3

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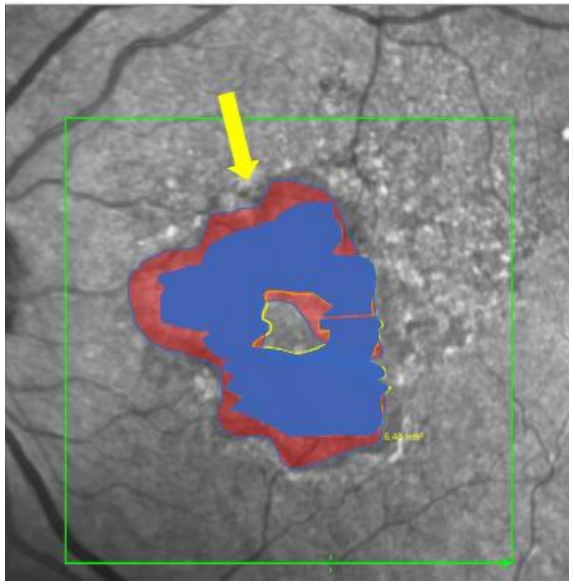
First Known Report of Retinal Tissue Regeneration in Dry AMD

Shown below are tracings of the GA boundary

Imaging shows a clear reduction in size of GA after treatment

Red = Perimeter before treatment **Blue = Perimeter at 9 months**



- **Area of atrophy regressed 27% from baseline.**
- **Restoration cannot occur naturally.**
- **Confirmed by multiple external experts using several assessment methods.**
- **Replay of expert's discussion available at www.lineagecell.com.**

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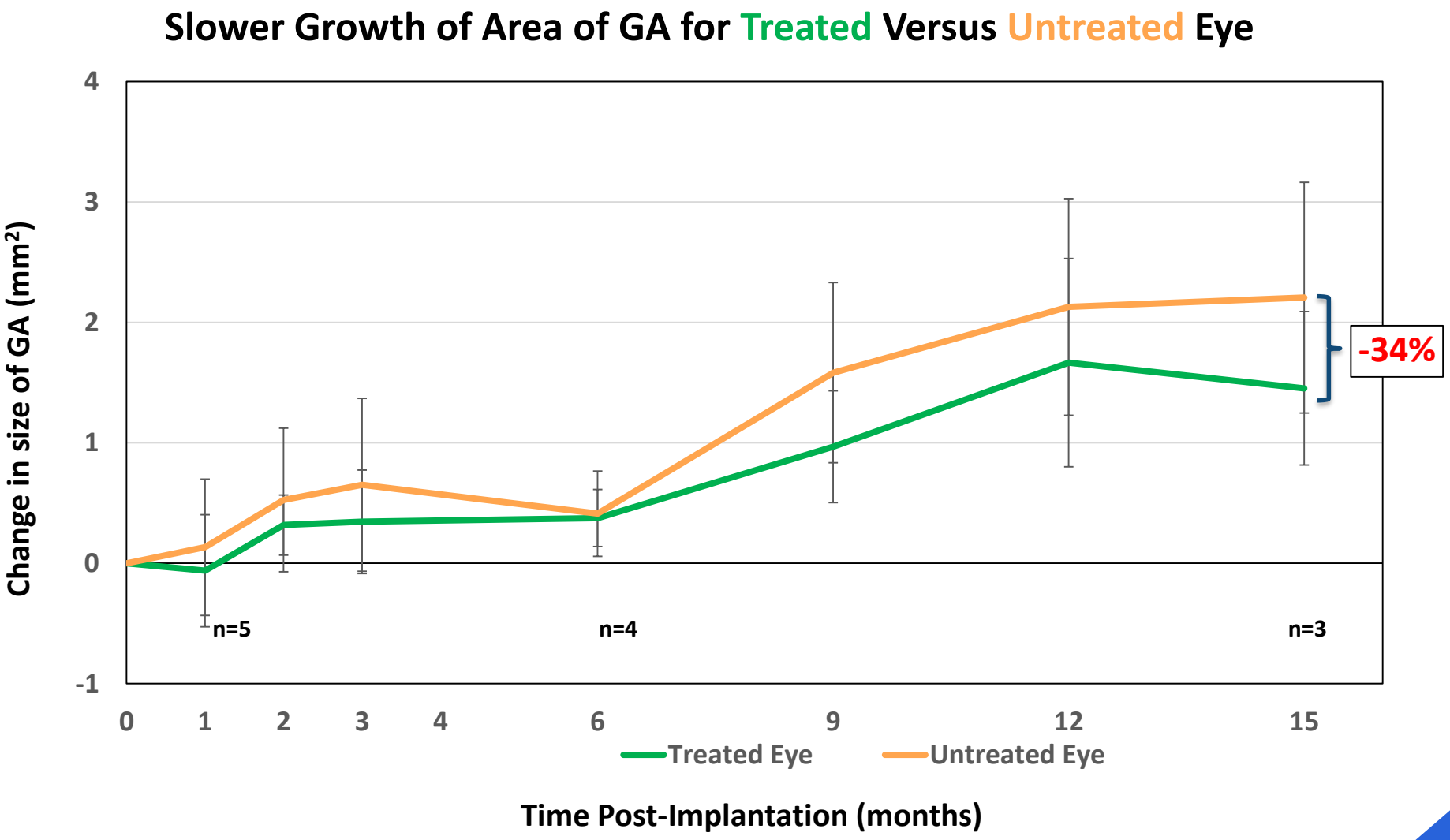
Cohort 4 (Better Vision) Patients – Slower GA Growth Observed

(As of ARVO May 2020 Update)



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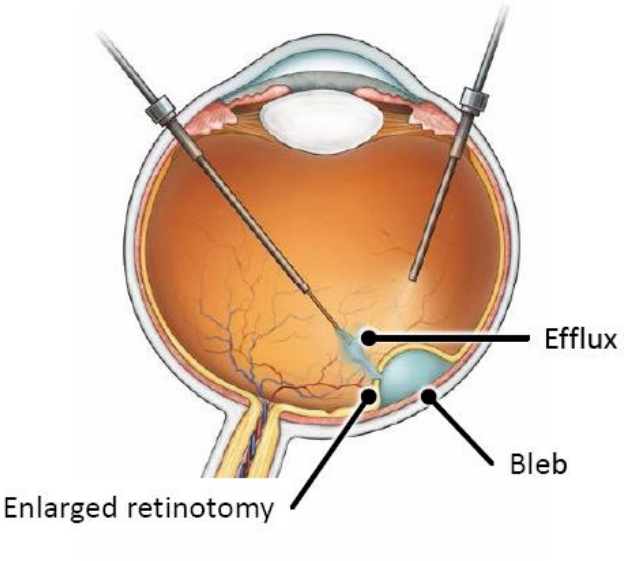
Data presented at 2020 ARVO Virtual Meeting

Proprietary Delivery System – The Orbit SDS

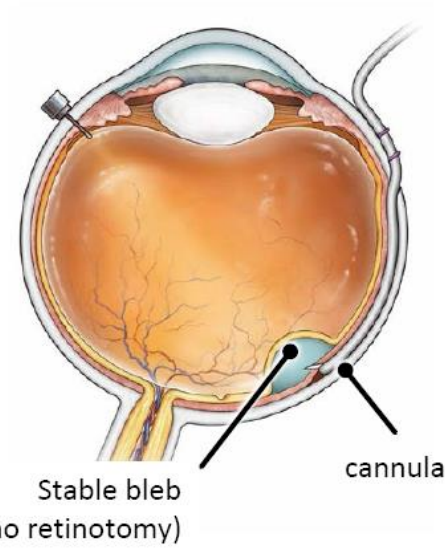
Lineage has an exclusive option to a delivery device which overcomes issues with the traditional method of delivering cells to the retina

Traditional Method (safety issues)



- The traditional method punctures the retina; cells then efflux (pass) into the vitreal cavity, causing adverse events (ERMs)
- ERMs were observed in 13 out of 15 patients

Orbit SDS (Lineage method)



- With the Orbit SDS, no retinotomy is performed, providing better dose control
- No patients formed an ERM after using the Orbit SDS (n=4, p=<0.001 versus traditional method)

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Lineage has an exclusive option on the use of Orbit to deliver cells for dry AMD

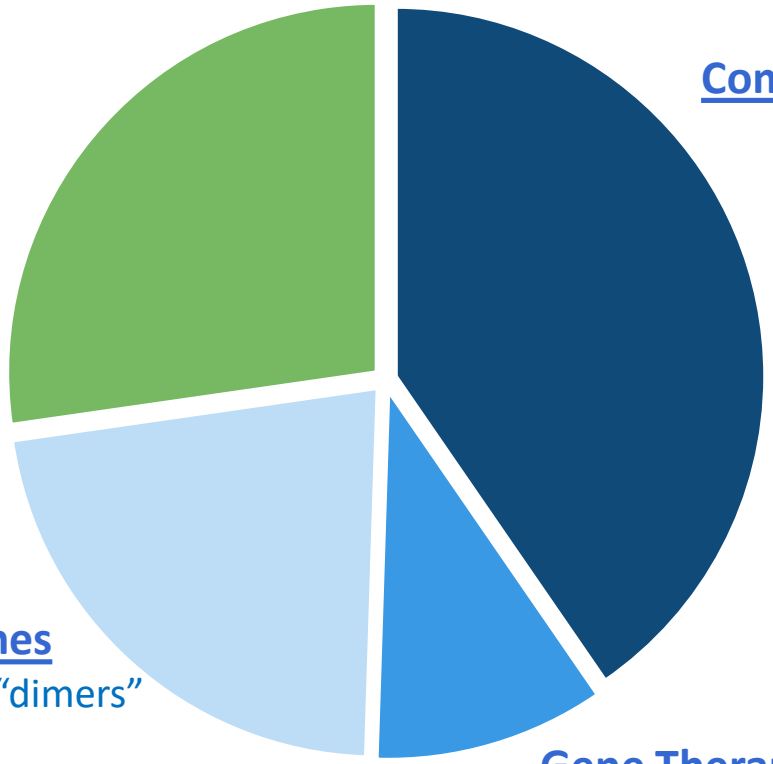
Dry AMD Competitive Landscape

<u>Only</u> cell therapy has potential to restore tissue with infrequent dosing
<u>Only</u> Lineage has shown evidence of retinal restoration
<u>Only</u> Lineage has access to the Orbit delivery system to deliver cells

Cell Therapy

- **Lineage Cell (Ph1/2)**
- Astellas (Ph1/2)*
- Regen. Patch (Ph1/2)
- jCyte (Preclinical)

Via acquisition of Ocata Therapeutics for $379M



Complement Inhibitors

- Apellis (Ph3 ongoing)
- Iveric (Ph2)
- Roche (Ph2)
- NGM (Ph1)
- Biogen (Preclinical)

Oxidative Stress Approaches

- Alkeus (Ph3), Vitamin A "dimers"
- Allegro (Ph2), integrins
- Stealth Bio (Ph2), mitochondria
- Boehringer (Ph1), inflammasome

Gene Therapy

(also targeting complement)

- Gyroscope (Ph1/2)
- Hemera (Ph1)

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Commercial-Scale Manufacturing Capabilities

- **Current capabilities enable commercial-scale cGMP Production**

- **OpRegen cells are >99% pure RPE cells**
  - NIH approved line was established >20 years ago
  - Extensive characterization and karyotyping performed on each batch
  - No genetic modifications are made to the cells

- **Immediate-use "thaw and inject" formulation**
  - No dose preparation is required
  - From frozen cells to injection device in 5 minutes

- **Current production scale is 5 billion cells per 3-liter bioreactor**
  - Current production is >2,500 clinical doses/batch
  - Further scale-up can be performed in larger or parallel reactors

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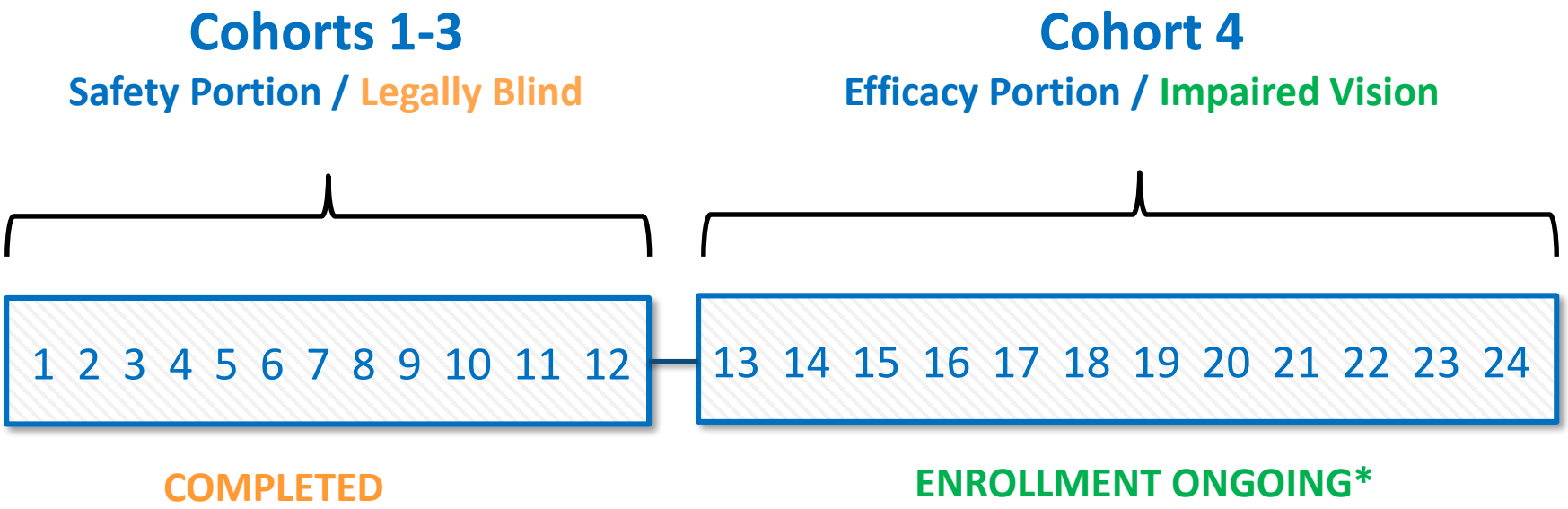
Ongoing Phase 1/2a Clinical Trial of OpRegen for Dry AMD



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** Patient enrollment expected to complete by YE 2020*

OpRegen – Positioned for Commercial Success

OpRegen has been designed to capture a multi-billion dollar opportunity:

- **Transplanting RPE cells may provide benefits other approaches cannot provide**
- **Market opportunity is not limited to monogenic deficiencies (for gene therapy)**
- **Treatment to date has been well-tolerated**
- **Some patients have exhibited clinically meaningful improvements in clinically-relevant metrics including visual acuity and reading speed**
- **Potential for recurring revenues with annual or biennial treatment**
- **May have application in other retina diseases (Stargardt's Disease)**
- **Issued patents cover aspects of production, characterization, and formulation**
- **Fast Track designation from FDA**
- **Exclusive rights to unique delivery device for RPE cells**
- **Potential for strategic partnership for late-stage development**

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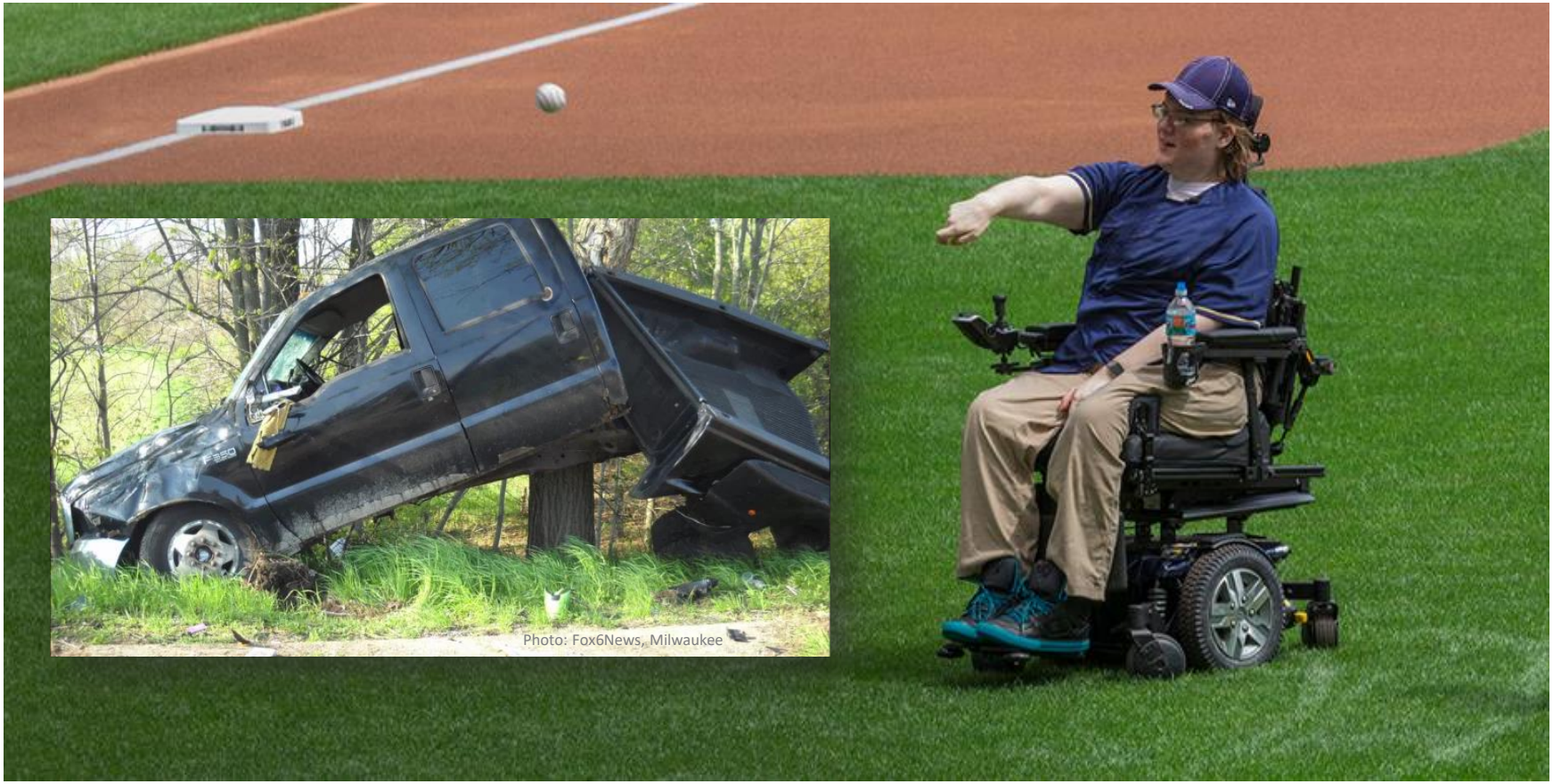
Lifetime care for an SCI patient can cost nearly $5 million

Source: christopherreeve.org

OPC1: Cell Therapy for Spinal Cord Injury

Lucas' Story



Lucas Linder, an OPC1 clinical trial participant, was paralyzed from the neck down.

The next year, he threw out the first pitch at a Major League Baseball game.

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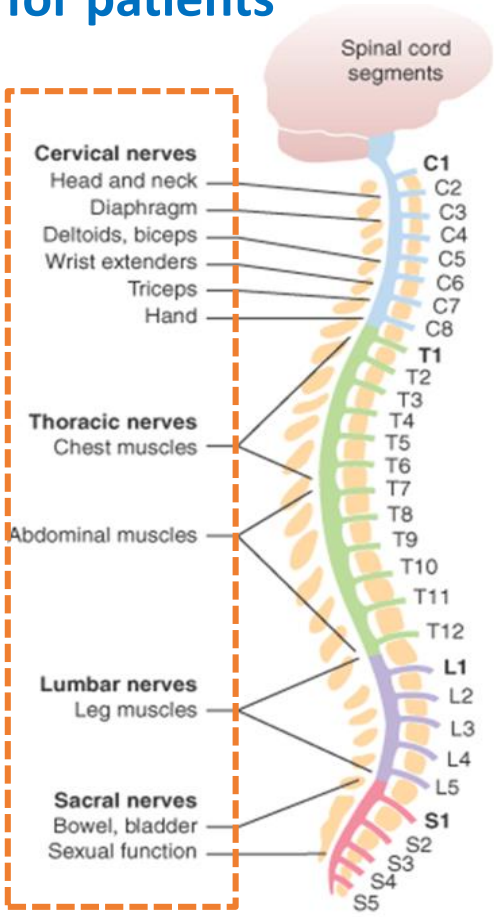
Using Lineage's **OPC1 cells** for Spinal Cord Injury

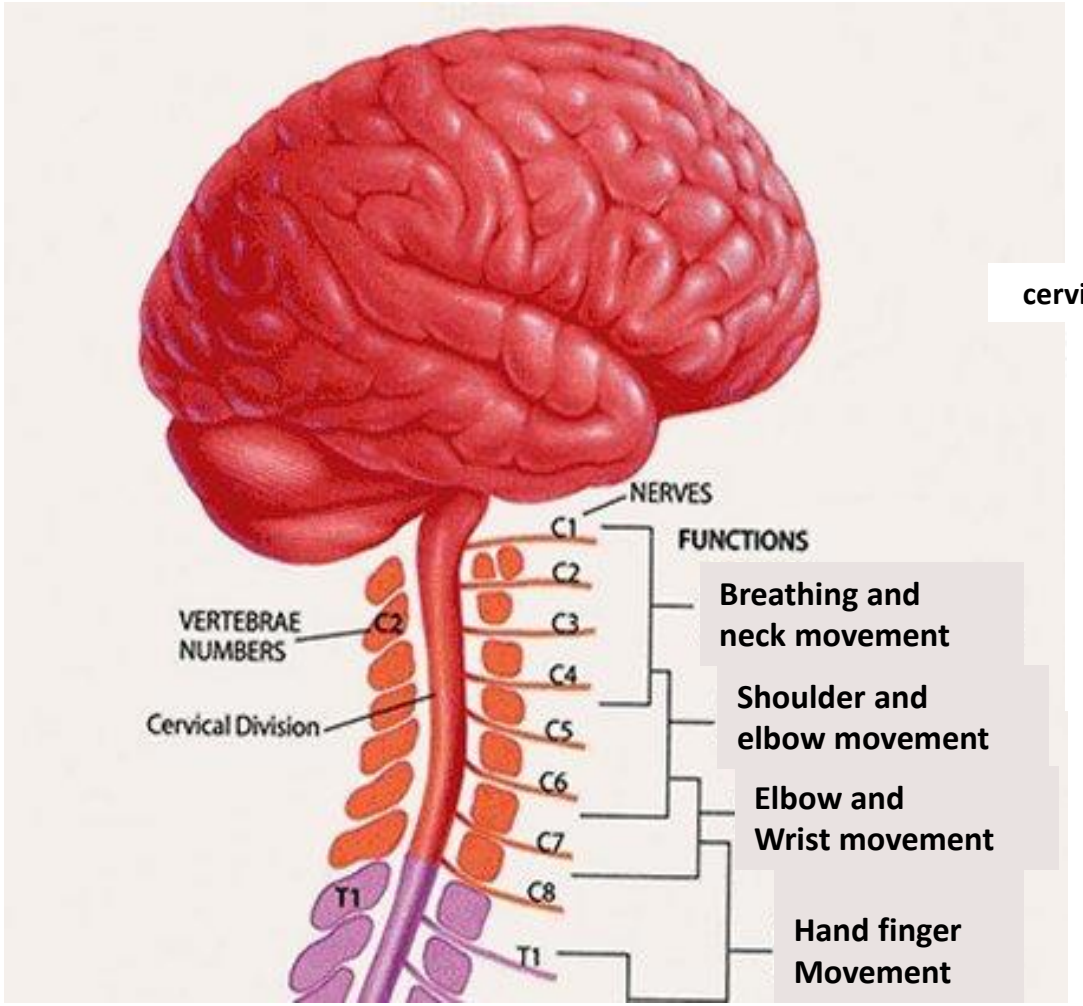
Loss of movement is the primary feature of a spinal cord injury. The goal of treatment with OPC1 is to provide additional upper limb & finger function and improve the quality of life for patients

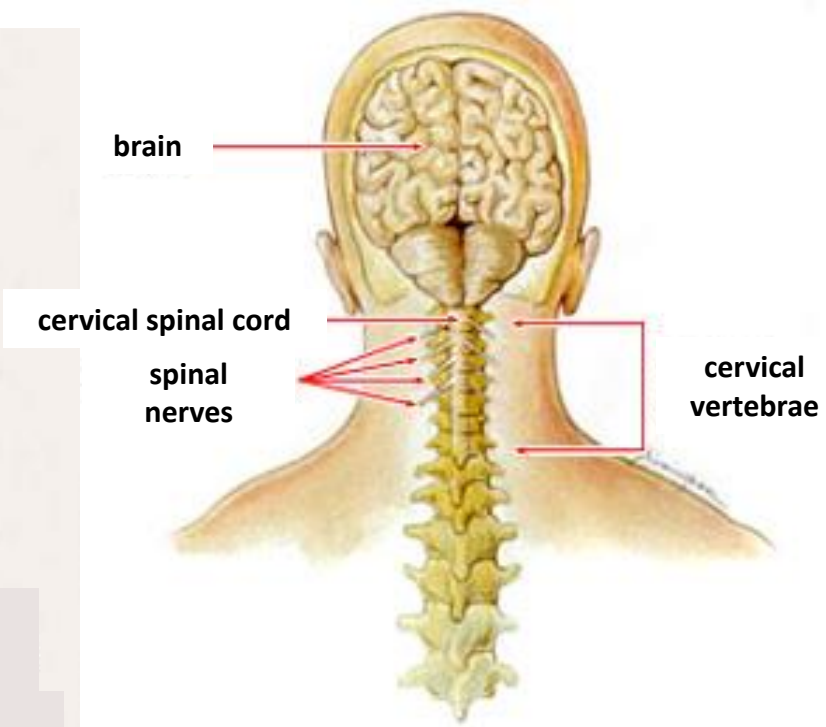
- **OPC1 is comprised of oligodendrocyte progenitor cells ("OPCs")**
- **The cells are manufactured from a cell line and injected into the spinal cord of patients**
- **OPCs provide electrical insulation for nerve axons in the form of a myelin sheath**
- **OPC1 has RMAT & Orphan Drug Designation**
- **$14M of support has been received from CIRM**



(*) National SCI Statistical Center, 2019 SCI Data Sheet.

Cervical Spinal Cord Injury Level and Motor Function





C5 – elbow flexors

C6 – wrist extensors

C7 – elbow extensors

C8 – hand finger flexors

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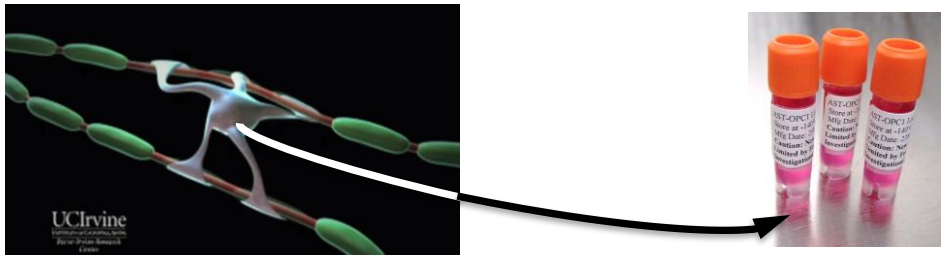
OPC1 Addresses the Complex Pathology of SCI

OPC1 is a cellular therapy involving the transplant of oligodendrocyte progenitor cells (OPCs) derived from a pluripotent stem cell line

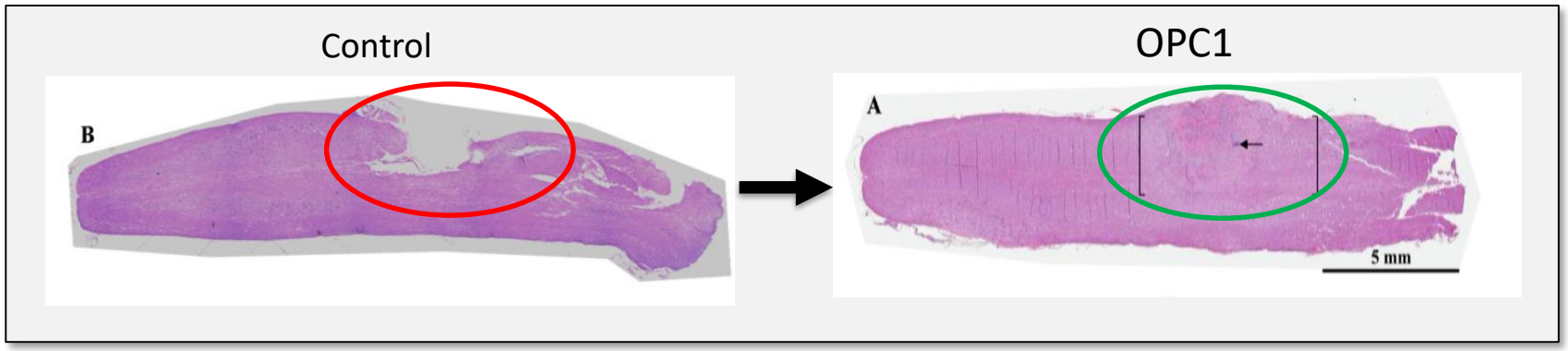


- **OPCs, which function to support and myelinate neurons, can be damaged and lost due to inflammatory response post injury**

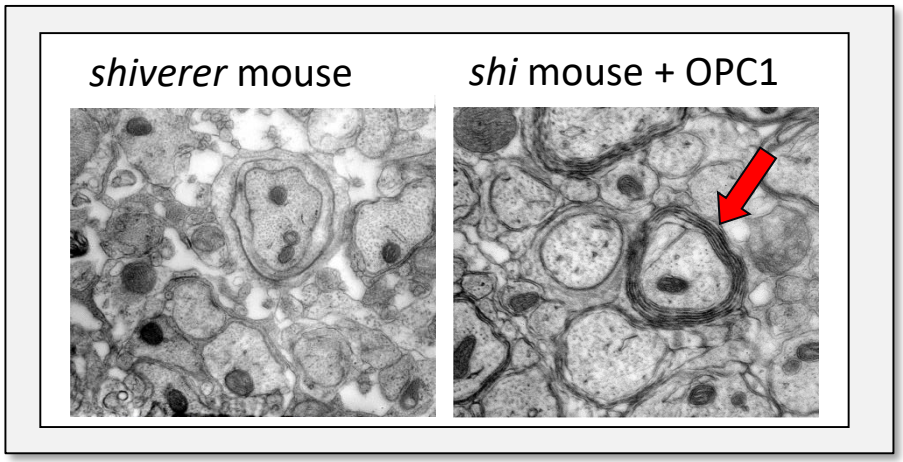
- **OPC1 has been shown to:**
  - **Remyelinate axons**
  - **Tissue remodeling: neovascularization, cavitation prevention**
  - **Promote neurite growth**
  - **Improve motor function**

OPC1 Mechanisms of Action

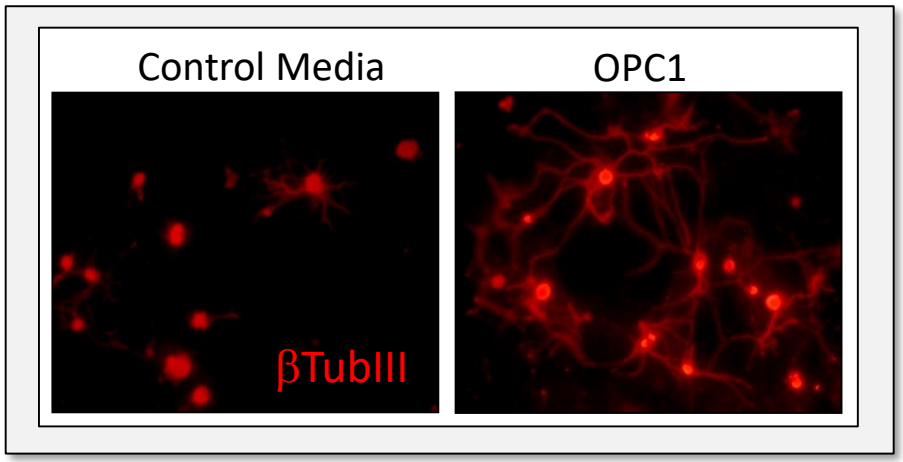
1. Prevention of Cavitation



2. Myelination of axons



3. Secretion of neurotrophic factors



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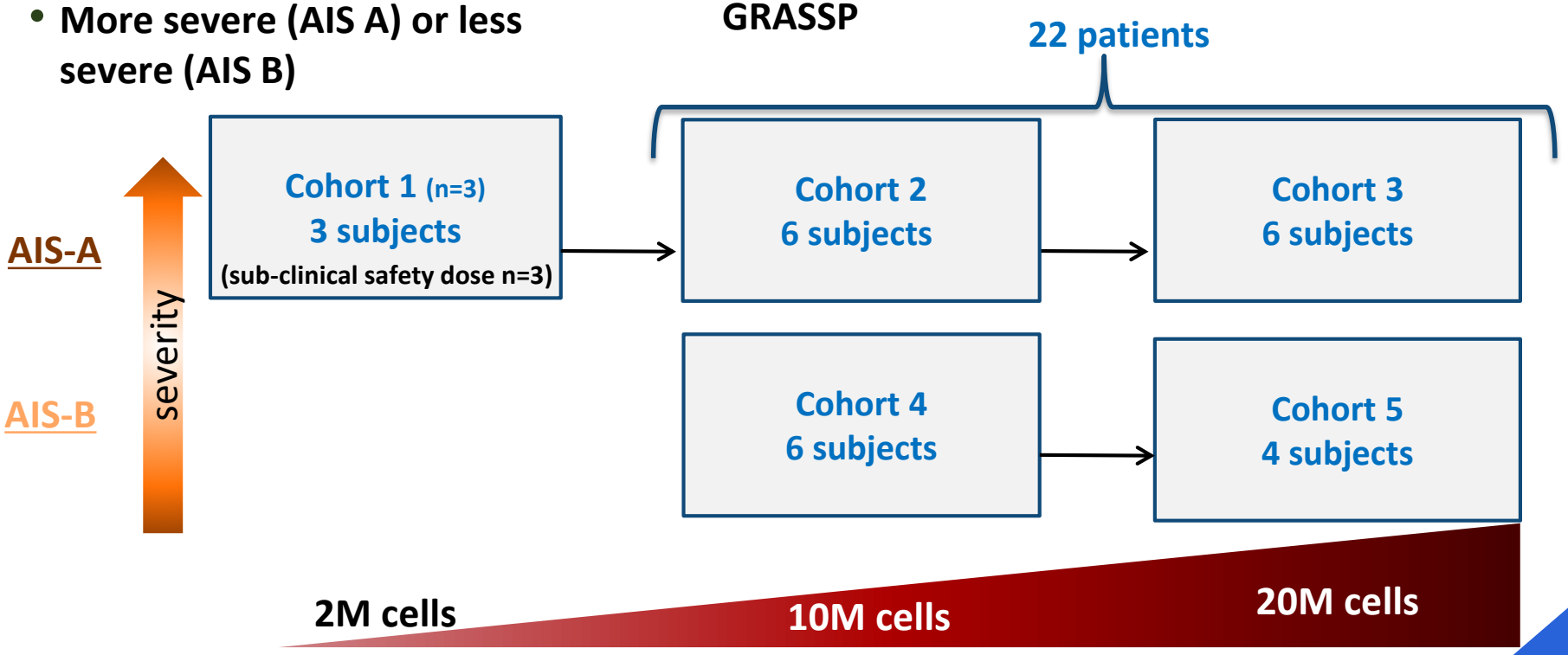
Clinical Trial Design (enrollment complete)

Safety and dose escalation in two grades of severity

- Open Label (n=25)
- Traumatic cervical SCI (C4-C7)
- Dosed 21-42 days post injury
- Ages 18-69
- More severe (AIS A) or less severe (AIS B)

- Primary Assessment: Safety
- Secondary Assessment: Neurological Function (ISNCSCI exams)
- Exploratory Functional Assessments: SCIM, GRASSP



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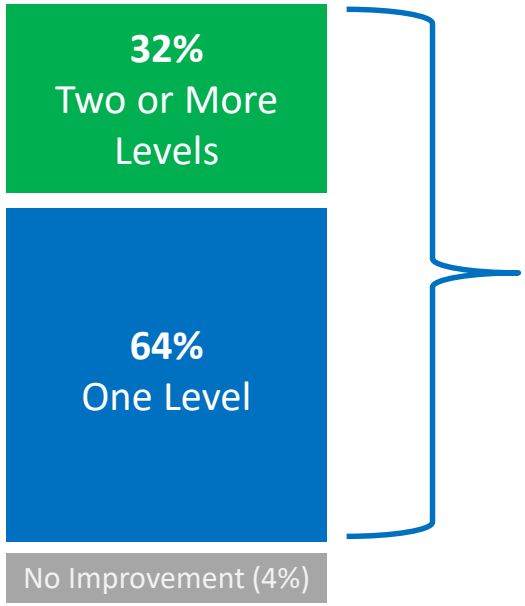
Clinical Trial Results - Safety and Efficacy in 22 Patients

Cell Engraftment
(at 12 months)

Motor Function Gain
(at 12 months)



To date, there have been no serious adverse events related to the OPC1 cells

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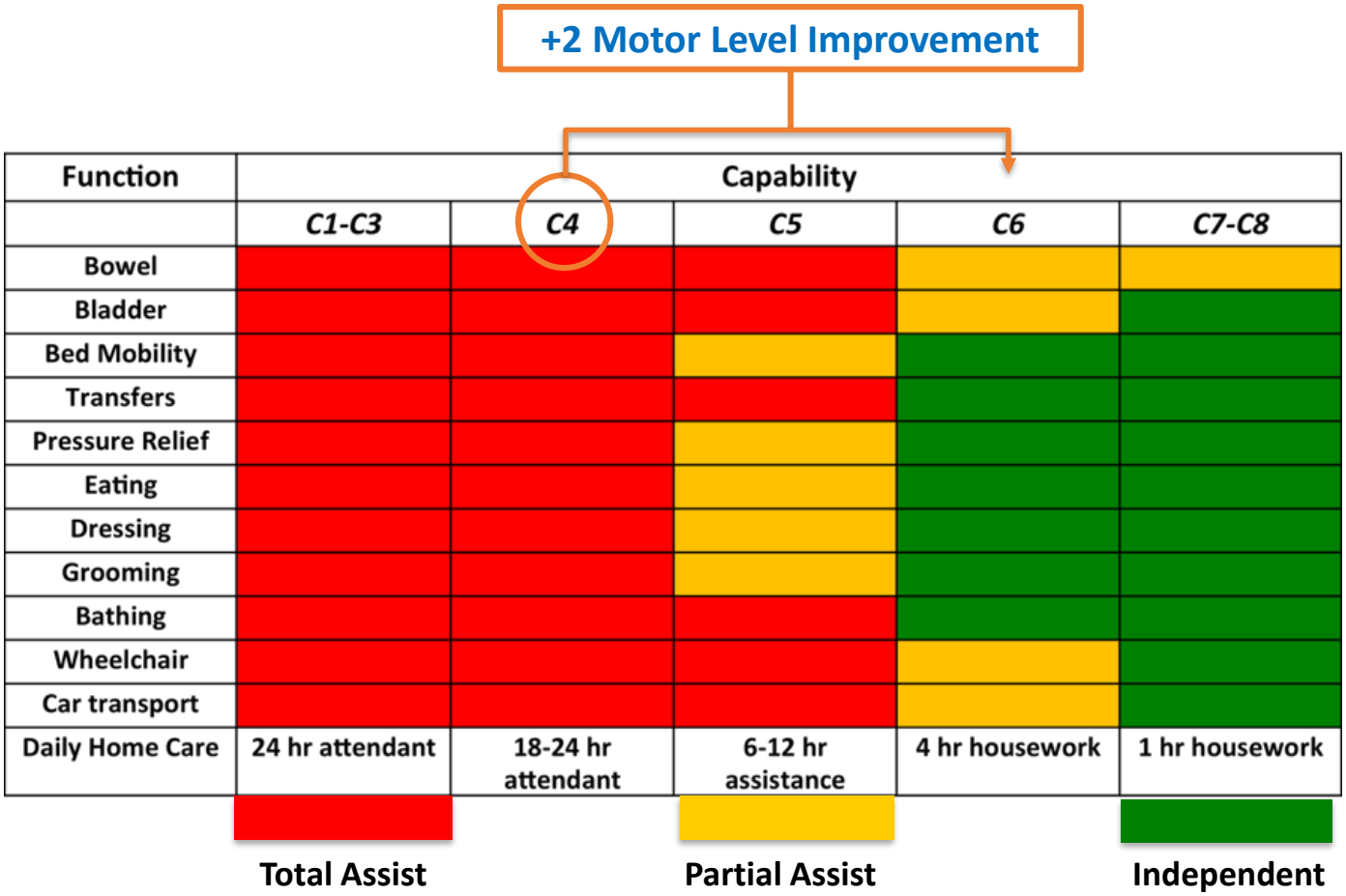
3 patients from Cohort 1 not included above because they received a sub-clinical "safety" dose of only 2M cells (the clinical dose is 10-20M cells)

Real-World Benefit from a Gain of 2 Motor Levels

Motor level gains translate into clinically meaningful improvements in self-care and reductions in cost of care



Activities of Daily Living across different levels of motor function after cervical complete SCI
Modified from Whiteneck et al. 1999)

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Clinical Trial – 2 Year Results (per Nov 2019 Update)

- **Overall safety profile of OPC1 continues to be excellent (21 subjects evaluated)**
  - **MRI scans show no evidence of adverse changes**
  - **No unexpected serious adverse events related to the OPC1 cells**
  - **No study subjects had worsening of neurological function**

- **Motor Level Improvements Persist and Improve**
  - **Cohort 1 subjects continue to be stable 2-4 years after treatment**
  - **5 subjects in cohort 2 achieved at least 2 motor levels of improvement over baseline on at least one side (previously 4 of 6)**
  - **1 subject in cohort 2 achieved 3 motor levels of improvement on one side; maintained at 3 years**

- **Upper Extremity Motor Score (UEMS)**
  - **Additional improvement in average UEMS score for Cohort 2**

Clinical Trial - Overall Summary

- **Excellent overall safety profile**
- **96% experienced durable engraftment through 1 year post-injection**
- **MRI scans available through 24 months show no evidence of adverse changes**
- **No subjects had a decline in motor function from Year 1 to Year 2**
- **95% of patients exhibited robust motor recovery in upper extremities at 1 year (at least 1 motor level on at least 1 side)**
- **Significant motor improvements were achieved in five of six cohort 2 subjects**
- **Results support further evaluation in a randomized, controlled study**

OPC1 Program: Next Steps

Key Considerations:

- **Compelling clinical data supports moving to later-stage clinical development**
- **Early-stage manufacturing issues (of prior owner) needed to be addressed - Lineage advantage!**
- **Leveraging Lineage's manufacturing capabilities to improve purity, scale, usability, and reproducibility: *update planned for early December***
- **A superior delivery device can enable a greater number of clinical sites**
- **Plan to discuss comparability plan and regulatory path for comparative trial with FDA**
- **Can begin considering regional and/or global partnership opportunities and external grant funding (CIRM, other organizations)**

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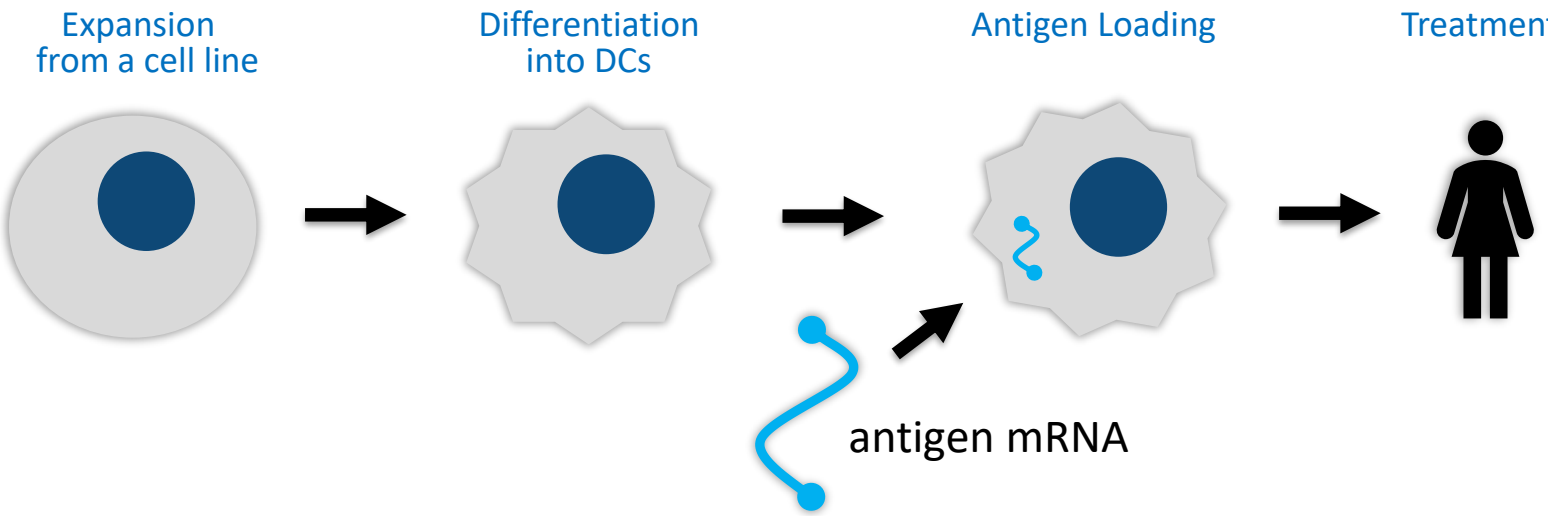
Immunotherapy is "poised to revolutionize treatment for all types of cancer"

Source: cancerresearch.org

VAC: Cell Therapy for Immuno-Oncology and Infectious Disease

VAC Platform

- **The VAC platform consists of large-scale production of mature immune cells called dendritic cells (DCs)**
- **DCs are manufactured and loaded with either a tumor antigen (to treat cancer) or a viral antigen (as a vaccine for infectious diseases)**
- **Antigen presentation to the patient's T cells creates a *targeted* immune response (up to 3%), leading to tumor cell destruction or clearance of virus**



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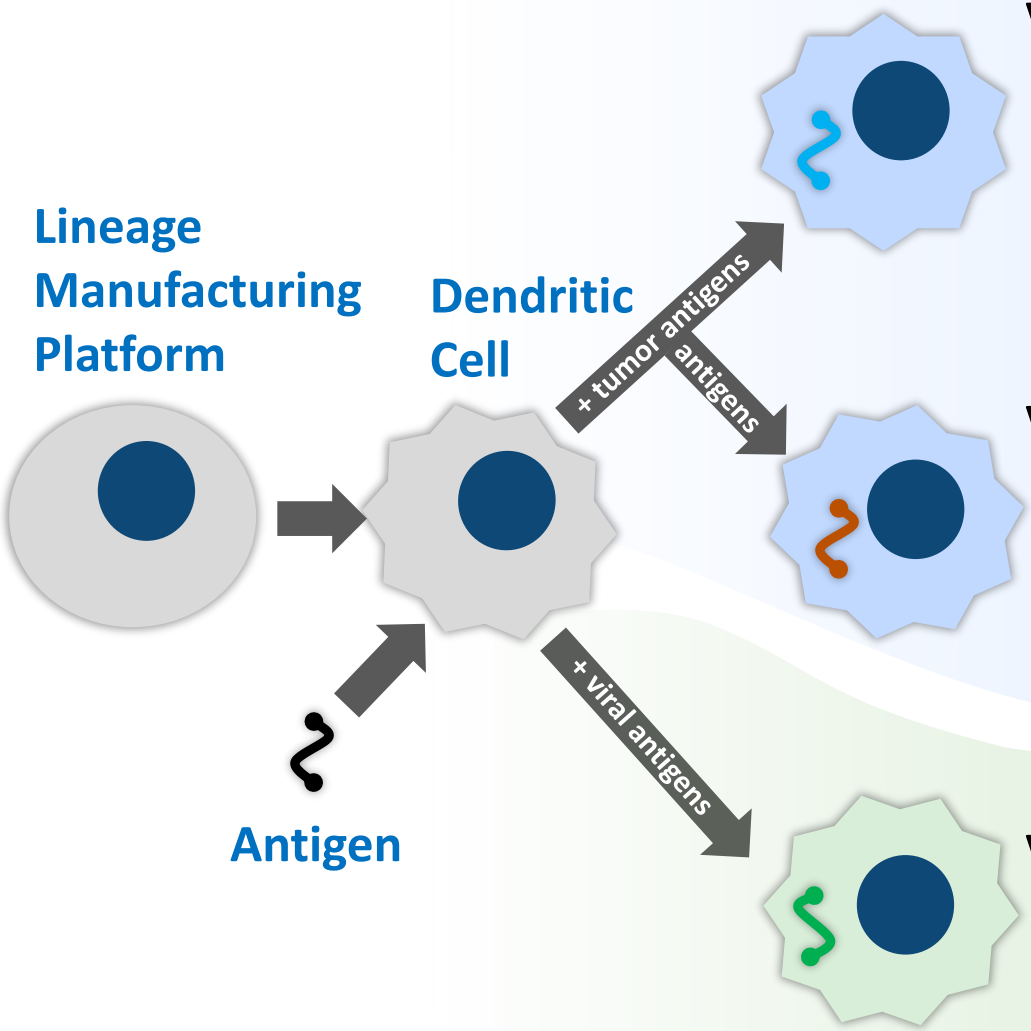
VAC Development – Multiple Programs from a Single Platform



VAC1 and VAC2 Highlights

- Positive phase 1 data in AML
- High levels of immunogenicity seen
- Cancer Research UK alliance
- Positive phase 1 in NSCLC trial run by CRUK

VAC3, VAC4, VAC5…Opportunities

- Create pharma partnerships based on new products
- Retain most valuable candidates
- Currently assessing antigens

VAC-Infectious Diseases

- Vaccine designed to provide long-term protection
- Leveraging VAC clinical data

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VAC Platform Next Steps

Upcoming Events and Key Considerations:

- **Complete dosing in ongoing clinical trial in NSCLC (n=8; 2 remain)**
- **Design and conduct VAC2 + checkpoint inhibitor clinical trial**
- **Design new products (i.e. VAC3, 4, 5, 6…) with newly discovered antigens**
- **Continue to identify potential grant opportunities for VAC platform**

Financial Overview

Cash, Cash Equivalents and Marketable Securities **(As of last reported quarter 9/30/2020)**	**$38 mm**
Debt	**$0.5M PPP loan**
Market Capitalization **(As of 11/6/2020)**	**~$193 mm**
Employees **(As of 11/6/2020)**	**53**

A new management team and prioritization of cell therapy programs has resulted in a more efficient and cost-effective business model

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Upcoming Milestones

PROGRAM	TIMING	INITIATIVES
OpRegen	Q4 2020	Present updated OpRegen data at AAO (Nov. 13 – 15, 2020)
	Q4 2020	Complete enrollment of phase 1/2a study
	Q4 2020	Planning discussions with the FDA on device and manufacturing
	Ongoing	Evaluate OpRegen partnership opportunities
	Ongoing	Consider expanding OpRegen development to other diseases of retinal degradation
VAC	Q4 2020	Complete dosing in ongoing clinical trial in NSCLC (n=8; 2 remain)
	Q1 20201	Complete patient enrollment in ongoing clinical trial in NSCLC
	2020/2021	Design and conduct VAC2 + checkpoint inhibitor clinical trial
	2020/2021	Design new products with newly discovered tumor antigens/ neoantigens
OPC1	Throughout 2020	Provide update on manufacturing enhancements
		Complete process development improvements to support late-stage clinical trial
		Evaluate delivery device solutions to access a greater number of clinical sites
		Consider regional and/or global partnership opportunities

Our Goal is to Provide Life-Changing Cell Therapies to Patients

Lineage Cell Therapeutics: Bringing the Promises of Cell Therapy into Clinical Reality

3 clinical-stage programs with billion-dollar potential and partnership opportunities

World class in-house GMP manufacturing

One of the largest patent portfolios in cell therapy

Funded well into 2022 with cost-efficient business model

Leader in the emerging field of regenerative medicine

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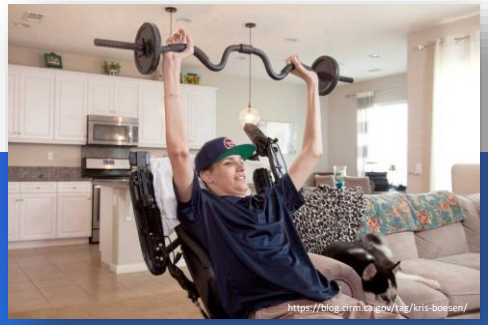
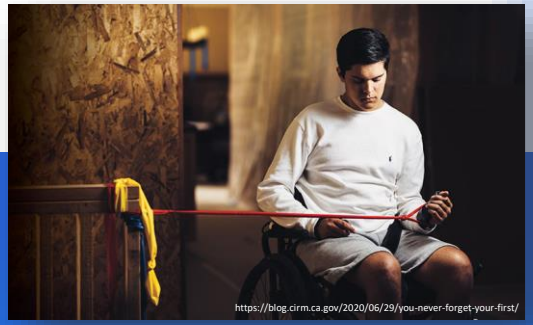
The Patients Are Our Inspiration.
View their stories at **lineagecell.com/media/#patients**

OPC1 SCiStar Study Participants

Lucas Lindner
"There's no reason to not look forward in the same way now that I had before all of this happened. I'm looking forward to driving again… it's a bright future."



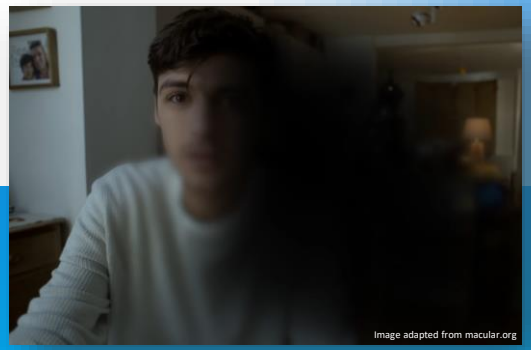
Kris Boesen
"I couldn't drink, couldn't feed myself, couldn't text or pretty much do anything, I was basically just existing. I wasn't living my life, I was existing."



Jake Javier
"Even though it's a completely different perspective, I can still lead that way. I can just try to be the best I can and to persevere the best I can."
Diablo Magazine, Feb. 16, 2017

The Millions Worldwide Suffering from Dry AMD Vision Loss

"Macular degeneration is a very frustrating condition which can greatly affect your day-to-day life."
- Macular Society



Courtesy of CIRM, American Macular Degeneration Foundation, and Macular Society