Annual Report 2024





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Letter from the Executive Director



Dear friends,

BSCS Science Learning made an unforgettable first impression on the world when we released our first high school biology course in 1963. Over the next decade, we reached more than 50% of high school biology classrooms in the United States. That initial success allowed us to grow into an independent nonprofit organization and expand to all grades and all sciences.

Today, we are working toward a vision of society in which every person enters adulthood prepared to use science to build a better future for themselves and their communities. In pursuit of this vision, we engage in research, development, and implementation in three areas that we see as key levers for change. These levers for change are:

- resources to support teaching and learning,
- professional learning experiences for educators, and
- capacity development in educational systems, including leadership development.

These three levers for change can make deep and lasting improvement in science education outcomes possible. And they are central to our work at BSCS.

In this report, we show what our efforts to apply these levers look like in practice. You'll read stories about teachers working with BSCS Science Learning to support educational leaders fostering effective and sustainable science education, teachers who are committed to overcoming challenges with the support of the BSCS Science Learning teams and materials, and long standing relationships rooted in trust built through ongoing collaboration.

These stories reflect the impact BSCS Science Learning has on science education across the country and our motivation to continue the important and sometimes challenging work we do. We hope that they motivate you, as well.

Sincerely,

Del y Ehr

BSCS in Action

In the following pages, we present three examples of our work. We explore them through three lenses:

- **Classroom story** How are people using BSCS materials?
- **BSCS backstory** How did we develop these materials?
- **By the Numbers** How has our work impacted the community, by the numbers?

| <u>04</u> | We're Living in a Local World CLIMATE EDUCATION PATHWAYS PROJECT |
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CLIMATE EDUCATION PATHWAYS: CLASSROOM STORY

We're Living in a Local World

With the Climate Education Pathways high school unit

"We're the peach state! We used to make a ton of peaches. But production has gone down. Why?"

With that question, Enya Granados hooked her Athens, Georgia students. Her classroom buzzed with ideas. Maybe farmers were to blame, or pests were eating the peaches. Throughout the unit, Enya's students investigate why peach production has declined by **building models**, **analyzing data**, and even visiting a local farm. They discovered the real culprit: peach trees aren't getting enough cool days during the year any more. Suddenly, Enya's students weren't just talking about peaches, they were **uncovering how climate change is changing their home state**.

Meanwhile, in rural Oregon, Brian Vollmer-Buhl's students were outside planting trees on a dreary spring day, but they were not bothered by the weather. They'd **learned how planting trees could have remote impacts**. Trees along local waterways strengthen watersheds which, in turn, boost salmon populations that support orcas in the Puget Sound.



In both classrooms, the shift was unmistakable. Enya noticed all her students, including students learning English, produced outstanding written work. Students who might have shut down in a traditional climate unit thrived.

As Brian reflected, "The climate unit is different from anything I've taught in the past 25 years. It's sensemaking through data and sharing your understanding with another person."

From Georgia peaches to Oregon rivers, students aren't just learning about climate change. Through BSCS curriculum that was designed for teachers to customize for their locations, they're discovering their power to shape solutions, connecting science to their daily lives, and developing understanding they will retain.

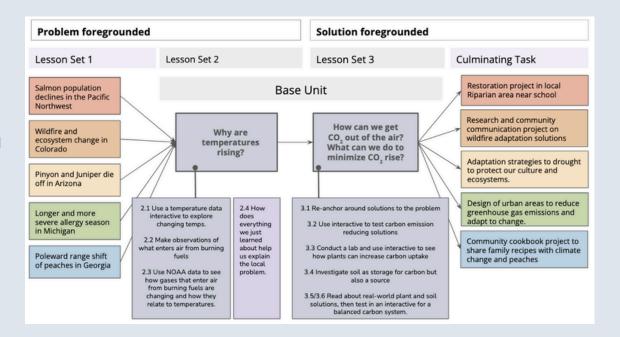
Climate Education Pathways Project

A customizable high school climate science curriculum

Enya and Brian were participants in an NSF-funded project, which began with a big question: Can instructional materials be designed so teachers can easily localize them and make the subject more meaningful for their students? The project focused on climate science for high school.

BSCS partnered with Oregon Public Broadcasting and the National Oceanic and Atmospheric Administration to create high-quality curriculum materials designed from the ground up for teacher adaptation. The team developed a comprehensive base unit focused on fundamental climate science including carbon cycling, global temperature changes, and greenhouse gases.

In the base unit, students engage with real climate data through interactive digital tools, exploring temperature trends, greenhouse gas concentrations, and potential solutions. Teachers then customize the unit to use local climate impacts as the motivating context for the base unit. This gives students the opportunity to use what they are learning to explore actions they can take in their communities.



This chart shows five localized storylines with the common base unit. Teachers design local lessons for Lesson Set 1 and the Culminating Task. They teach BSCS-developed lessons in Lesson Sets 2 and 3, with opportunities to connect back to local phenomena.

Climate Education Pathways By the Numbers 2024



25 Teachers
participated in intensive
professional learning



60 Hours
of professional
development led by BSCS



2,062 Students
impacted through
customized
climate science education



A New Chapter for High School Biology

A teacher's experience with implementing BSCS Biology: Understanding for Life curriculum



This program got me back in the game. It's so relevant to kids' lives. My students are constantly making connections between what they see in the world and what we're learning in class. – Justyne Biddle, High School Biology Teacher, Leander ISD

After 25 years in the classroom, veteran high school teacher Justyne Biddle was thinking about retiring. "Since COVID, getting students to buy in and laugh has been a challenge. I thought, maybe I'm done," she recalls.

That changed when her district **adopted** *BSCS Biology: Understanding for Life.* Along with 35 colleagues in Leander, Texas, Justyne joined more than 35 hours of professional learning provided by BSCS to explore the new program. The course begins with an investigation of a teenage boy's mysterious illness, in which students uncover the science and societal implications of infectious diseases. *From the first day, Justyne's students were hooked.*



Photo: BSCS leader Cindy Gay, leading professional learning for BSCS's high school biology program.

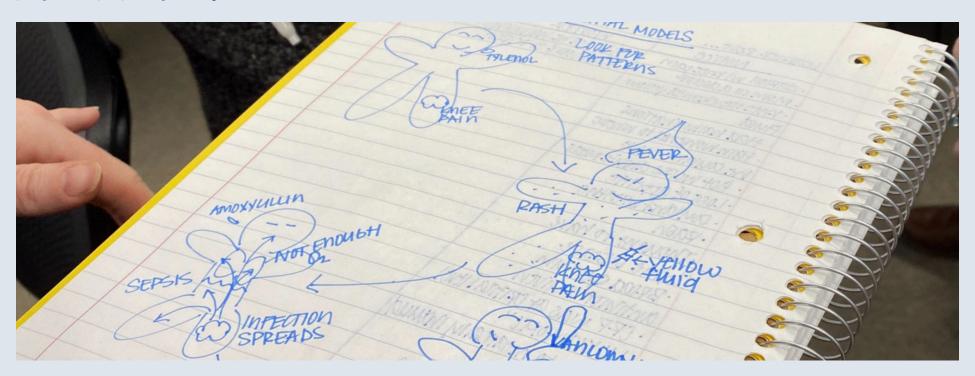
HIGH SCHOOL BIOLOGY: CLASSROOM STORY

Justyne observed **students across all levels taking risks**, **sharing ideas**, **and building knowledge together**. Justyne isn't the only teacher noticing changes in their classrooms, teachers nationwide reported deeper engagement and improved student learning. Those that have had the chance to participate in BSCS's professional learning programs report they feel very well supported.

The stakes are high in Texas, where all students must pass the biology end-of-course exam to graduate. But Justyne is optimistic. "Parents are even thanking me for challenging their kids. They know real life is full of complex problems, and this program is preparing them for it."

"It's amazing to see what kids can do because of how the curriculum was written, we're seeing growth not just in science knowledge, but in confidence for all students including emerging multilingual learners."

Anna Wydeven, Senior Secondary Science
 Curriculum Coordinator at Leander ISD, District
 Leader



BSCS Biology: Understanding for Life

BSCS Biology: Understanding for Life, published in 2022 is a full biology curriculum and textbook materials that transforms how high school students engage with science by centering learning around the challenges they'll actually face in life.

The program anchors each unit around a societal issue, from infectious disease to ecosystem health, and asks students to investigate phenomena, ask questions, and figure things out for themselves. The program was designed using Anchored Inquiry Learning, BSCS's instructional model for the 21st century.

Anchored Inquiry Learning provides teachers with a framework that guides students from initial curiosity through investigation to understanding, helping them build knowledge while making meaningful connections. The program's focus on real-world relevance, student-driven investigation, and equity makes it a powerful tool for preparing students for both science and life.

In June 2023, BSCS Biology became the first high school science program ever to receive all-green ratings from EdReports. Green ratings signify that materials meet EdReports' high standards for quality and usability. Districts and schools have long looked to EdReports as a trusted source for impartial reviews of instructional materials.



BSCS Biology: Understanding for Life By the Numbers 2024



81,392 Books

and e-books for *BSCS Biology* have been sold since publication in 2022



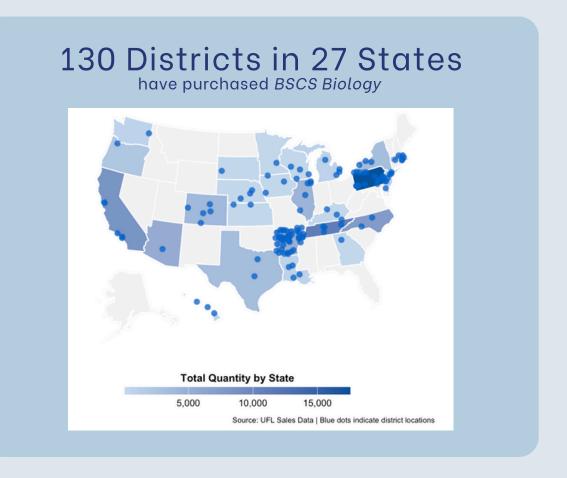
600 Educators

participated in BSCS-led professional learning for *BSCS Biology* in 2024



200 Hours

of *BSCS Biology* professional learning led by BSCS nationwide in 2024



Partnership in Practice

20 years of partnership with Jefferson County Public Schools

Brittany Thompson, K-12 Academic Specialist for Jefferson County Public Schools (JCPS) in Louisville, Kentucky, was observing a middle school science classroom with a large number of English language learners. The room was rich with discussion as **students leaned over desks to share ideas**, **debate predictions**, **and create models** explaining how heat moves through materials. Students drew on what they'd learned about the reflection of light in earlier lessons, thinking critically and making connections for themselves. In this middle school classroom, it was more than a lesson on thermal energy, it was a space of collaboration and discovery ignited by teachers equipped with BSCS led professional development and high quality customized curriculum.

Across Jefferson County Public Schools, **science learning was being transformed** in similar ways. Students were applying ideas from one unit to the next, making connections within units, and growing confident in their own scientific reasoning.

This transformation represents the latest chapter in a partnership that has endured for nearly two decades. Since 2006, the two organizations have worked side by side, each bringing opportunities and funding to the other with a shared commitment to improving science learning outcomes. As BSCS leader Jody Bintz likes to say, "We do the hard stuff together."



PARTNERSHIP IN PRACTICE: CLASSROOM STORY

The latest "hard stuff" began in 2021, when JCPS offered teachers the option to pilot OpenSciEd Middle School Science—a new open educational resource developed by a consortium of science educators and researchers led by BSCS. Many schools opted in, but the timing was challenging: this was happening just as schools were emerging from COVID, with teachers and students exhausted from months of online learning and morale at a low point.

The challenges multiplied when Brittany's district leader departed at the start of the school year. Brittany, who had signed on as an instructional coach expecting an exciting challenge, suddenly found herself stepping into the role of Academic Specialist, responsible for science across 130 schools.



This was a very **challenging time to engage teachers** in professional learning, luckily, **BSCS and I go way back**. Our work together has changed my life. I always have **complete confidence that BSCS's programs will meet our district's goals.** And I knew I could count on the team to adjust and adapt the OpenSciEd professional learning as needed given the challenges we were facing.

-Brittney Thompson, K12 Academic Specialist, JCPS



PARTNERSHIP IN PRACTICE: CLASSROOM STORY

Despite the difficulties, participating teachers did their best to implement OpenSciEd during that unstable fall 2021 semester. By 2024, the district had decided to adopt OpenSciEd Middle School Science for all students and contracted with BSCS to provide 12-hours of professional learning to all middle school science teachers.

By fall 2024, Louisville's science classrooms were alive with curiosity and discussion. Students were **exploring real-world phenomena** and **making sense of science** on their own terms, while teachers felt confident leading student-centered learning.

These classrooms are proof that true **transformation takes time and partnership**—measured not just in hours of professional learning, but in the years of collaboration, trust, and shared commitment that make ambitious change possible.

One thing is certain: Brittany got the exciting challenge she signed up for and so much more. And she hopes to continue doing the hard stuff, together with BSCS.

As BSCS leader Jody Bintz likes to say, "We do the hard stuff together."



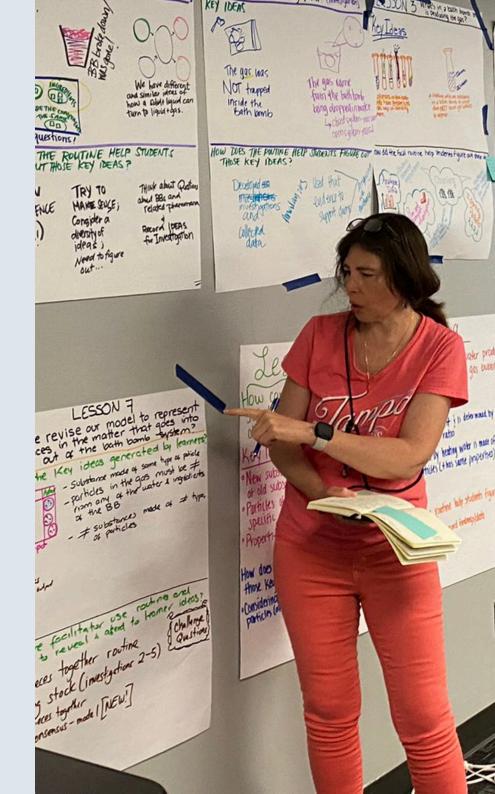
20 Years of Partnership with JCPS

BSCS began partnering with Jefferson County Public Schools in Louisville in 2006 to support the implementation of new science materials.

Over nearly two decades, **this collaboration has evolved through multiple initiatives**, from implementing new curricula funded by a GE Grant in the late 2000s to a professional learning program (<u>STeLLA</u>®) for teacher leaders in high school biology from August 1, 2015 to August 31, 2019, to more recently from 2021-present with the OpenSciEd curriculum implementation described in the above story.

Each project focused on building capacity at the **district level**, working closely with secondary schools and instructional leadership teams.

From BSCS's perspective, this sustained partnership demonstrates how **long-term collaboration and trust** enable deep and **lasting educational change**.



20 Years of Partnership with JCPS By the Numbers 2024



200 Teachers

in JCPS participated in BSCS-led professional learning



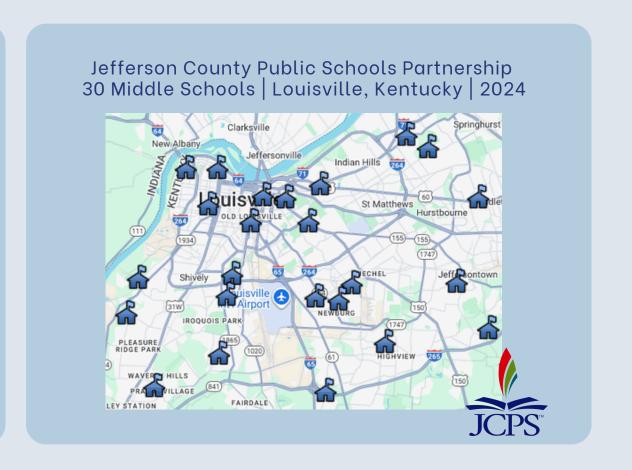
84 Hours

of professional development were led by BSCS in JCPS during 2024



21,334 Students

in JCPS middle schools impacted in 2024



HOW BSCS INNOVATES FOR IMPACT <u>18</u> **PUBLICATIONS & RESEARCH THEMES INSTRUCTIONAL MATERIALS**

PROFESSIONAL LEARNING

BSCS

impact in 2024.

Impact

In the following pages, we

impact and the scale of our

describe the ways that BSCS has

How BSCS Innovates for Impact

Research-Driven Innovation How do we know what to do and determine that we're making an impact along the way? All of our work is informed by prior research and improved through cyclical processes of research and innovation.

Examples of this work: BSCS Research

Resources for Science Teaching and Learning How do we support change and improve science education? We develop high quality resources that support effective teaching and learning in science for all students and all grade levels.

Examples of this work: <u>HS Bio</u> | <u>OpenSciEd Middle School</u>

Professional Learning for Educators and Educational Leaders

How do we support teachers and leaders to inspire all learners? We design, develop, and lead intensive and customizable professional learning programs that deepen educators knowledge and increase their confidence.

Examples of this work: <u>BSCS Biology</u> <u>STeLLA</u> <u>NextGen TIME</u>

Publications

BSCS sees resources for teaching and learning, including instructional materials, as powerful tools to support change. At the heart of BSCS's efforts to improve science learning in school and out of school are high quality resources that support effective teaching and learning.



Research Themes

Our publications in 2024 spanned six interconnected themes that advance science education through innovative curriculum design, assessment, and professional learning.

Framework-Aligned Assessment Innovation

Developing and implementing the 5D Assessment framework that explicitly attends to students' interests, identities, and meaningful phenomena while aligning with Next Generation Science Standards.

Equity-Centered Science Education

Addressing systemic inequities in science education through curriculum design, teacher preparation, and instructional materials that challenge essentialist thinking and promote inclusive practices.

Curriculum-Based Professional Learning

Building teacher capacity through curriculum-focused partnerships that bring together preservice programs, practicing teachers, and cross-stakeholder collaborators.

Model-Based and Three-Dimensional Instruction

Developing and studying the impact of instructional materials and approaches that integrate science practices, crosscutting concepts, and disciplinary core ideas through model-based reasoning.





Open Education Resource Development

Creating freely available, research-based curriculum materials that exemplify best practices in science education while being adaptable to local contexts and priorities.

Place-Based and Localized Phenomena-Driven Learning

Creating learning experiences that connect students to local contexts and meaningful phenomena, emphasizing student agency and community connections.

New Instructional Materials

BSCS sees resources for teaching and learning, including instructional materials, as powerful tools to support change. At the heart of BSCS's efforts to improve science learning in school and out of school are high quality, research-backed resources that support effective teaching and learning. These four resources were published in 2024.

OpenSciEd is an open source science curriculum collection for all grade levels in science. BSCS has led and collaborated on the development of OpenSciEd instructional materials. BSCS also designs, develops, and leads intensive professional learning for OpenSciEd programs.

High School

Elementary

Climate Education Pathways

This high school unit supports teachers in easily developing customized climate science units adapted to student's local environment.

<u>Place-Based Learning for</u> <u>Elementary Science at Scale</u>

This 4th grade unit supports teachers in developing custom earth science units adapted for student's local environments.

OpenSciEd High School Physics

This high school course is an open source physics curriculum that supports teachers in implementing phenomena driven units that are flexible and aligned with NGSS science standards.

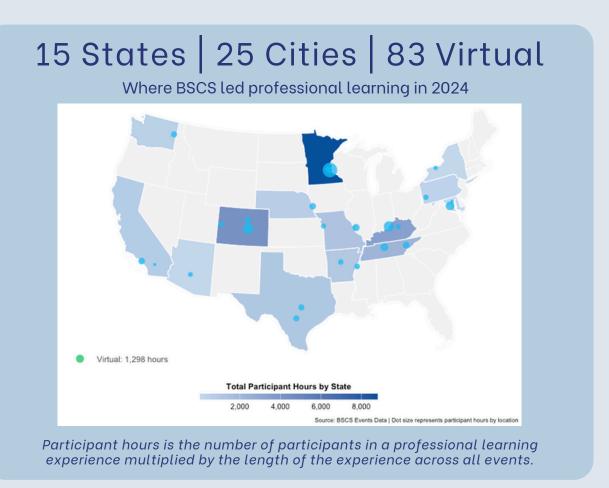
OpenSciEd Elementary

This six-unit elementary curriculum is an open source science curriculum designed to support teachers in sparking student curiosity with real-world phenomena.

2024 Professional Learning Reach

We are committed to translating our research into high-quality professional learning experiences for educators and leaders. Across all our programs, BSCS hosted events in 25 cities, 15 states, and 83 virtual events in 2024.



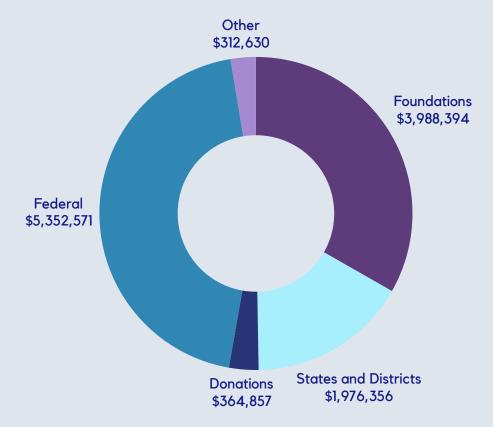


Financials and Leadership

| <u>23</u> | FUNDING & SUPPORT |
|-----------|-------------------|
| <u>26</u> | FINANCIALS |
| <u>27</u> | LEADERSHIP |

2024 Funding

As an independent nonprofit, we obtain funding through grants, contracts, and donations to tackle the most important challenges in science education. Funders for our work include organizations listed here.



Federal Agencies

National Science Foundation US Department of Education

Foundations

Carnegie Corporation of New York Gordon and Betty Moore Foundation

Nonprofit Organizations

New Visions for Public Schools

OpenSciEd/National Center for Civic Innovation

Ripple Effect

Ten Strands

Texas Science Education Leadership Association

Corporations

Bio-Rad

Kendall Hunt Publishing Company Western Digital

Schools, Districts, and State Agencies

Arkansas

Arch Ford Education Service Cooperative Great Rivers Education Service Cooperative

Arizona

Mesa Public Schools Piggott Public Schools

California

Compton Unified School District
Long Beach Unified School District
Norwalk-La Mirada Unified School District

Colorado

Colorado Springs School District 11 Denver Public Schools Mesa County Valley School District 51

DC

Office of the State Superintendent of Education, Washington, DC

Kentucky

Ashland Board of Education Commonwealth of Kentucky Jefferson County Public School Louisville Pike County Schools

Maine

Neighborhood House Charter School

Minnesota

Minneapolis Public Schools Saint Paul Public Schools

Nebraska

Lincoln Public Schools

New Mexico

High Plains Regional Education Cooperative #3 Region 9 Education Cooperative

New York

Riverdale Country School Riverdale Kingsbridge Academy

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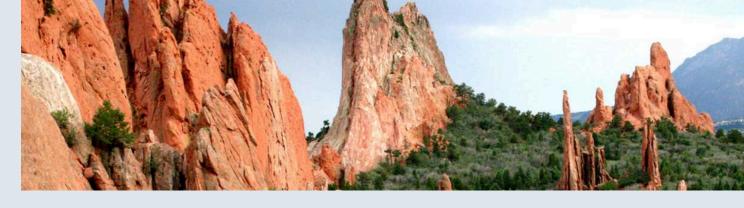
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Together, we bring the best in science education to all young learners—and influence the next generation of scientists and problem solvers.

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FINANCIAL ACTIVITY AND ASSETS FOR FISCAL YEAR 2024

January 2024-December 2024

| OPERATING REVENUES | Unrestricted | Donor Restricted | Total | FY'23 | |
|---------------------------------------|-----------------------------------------|--------------------|---------------------|-----------------------|-----|
| Contributions | | | | | |
| Federal and State | 5,352,571 | - | 5,352,571 | 6,686,251 | |
| Foundation | 610,252 | 2,778,142 | 3,388,394 | 2,750,083 | |
| Other Grants and Contributions | 711,572 | 253,285 | 964,857 | 71,691 | |
| Total Released from Restrictions | 1,743,092 | (1,743,092) | _ | - | |
| Revenues from Contracts | | | | | |
| Contract Services | 1,902,095 | - | 1,902,095 | 1,150,309 | |
| Other Income | 14,640 | _ | 14,640 | 29,968 | |
| Royalty/Sales/Participant Fees | 372,251 | _ | 372,251 | 99,598 | |
| Total | \$10,706,473 | \$1,288,335 | \$11,994,808 | \$10,787,900 | |
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| | | | | | |
| OPERATING EXPENSES | Unrestricted | Donor Restricted | Total | FY'23 | |
| Program Services | 7,079,861 | - | 7,079,861 | 8,036,453 | |
| General and Administrative | 3,811,910 | - | 3,811,910 | 3,500,624 | |
| Fundraising and Development | 188,804 | - | 188,804 | 69,503 | |
| Total | \$11,080,575 | - | \$11,080,575 | \$11,606,580 | |
| Operating Revenue Less Expenses | (\$374,102) | \$1,288,335 | \$914,233 | (\$818,680) | |
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| | | D D | T 1 1 | F) (100 | |
| NONOPERATIONAL INCOME | Unrestricted | Donor Restricted | Total | FY'23 | |
| Realized Gain (loss) on Investments | 34,446 | - | 34,446 | (25,323) | |
| Interest Income | 62,088 | - | 62,088 | 37,402 | |
| Other Income | 142 | - | 142 | - | |
| Interest Expense | (10,746) | - | (10,746) | (20,243) | |
| Unrealized (loss) Gain on Investments | 44,780 | - | 44,780 | 151,036 | |
| Total | \$130,710 | - | \$130,710 | \$142,872 | |
| | | | | | |
| NET ASSETS | Unrestricted | Donor Restricted | Total | FY'23 | |
| Change in Net Assets | (243,392) | 1,288,335 | 1,044,943 | (675,808) | |
| Net Assets – Beginning of Year | 1,318,191 | 919,155 | 2,237,346 | 2,913,154 | |
| Net Assets - End of Year | \$1,074,799 | \$2,207,490 | \$3,282,289 | \$2,237,346 | 0.4 |
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