**CITY OF MONROVIA**
**COMMUNITY SERVICES COMMISSION**
**AGENDA REPORT**

**DEPARTMENT:** Community Services **MEETING DATE:** October 8, 2019

**PREPARED BY:** Tiffany Peterson, Recreation Coordinator **AGENDA LOCATION:** CC-3

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**TITLE:** 2019 Junior Researcher Academy Evaluation

**OBJECTIVE:** To provide the Community Services Commission with an overview of the 2019 Junior Researcher Academy in partnership with Oak Crest Institute of Science.

**BACKGROUND:** Since 2017, the Community Services Department has partnered with Oak Crest Institute of Science (Oak Crest) to offer programs for our youth. Oak Crest is an innovative chemistry and biology research and education center where today's scientists immerse a diversity of students of all academic levels in high-impact research. They believe in cultivating tomorrow's scientists' one individual at a time.

Historically, the City offered a free traditional recreation summer camp, Summer Extravaganza, at Recreation Park. In the summer of 2017, to enhance the Summer Extravaganza Program, the City partnered with Oak Crest to develop a science academy with the focus of providing a meaningful STEM program for participants and leverage the biotech incubator growing in Monrovia. Participants, ages 6-16, were able to take a fieldtrip to Oak Crest labs to receive a tour and participate in hands on science experiments. The fieldtrip and partnership with Oak Crest was well received by participants, City staff, and Oak Crest. In order to reduce duplication of services with the Boys and Girls Club who also offer a summer program at Recreation Park, the City moved away from the traditional recreation summer camp model in 2018 to offer a pathways to science program in partnership with Oak Crest.

During the summer of 2018, the partnership with Oak Crest was multifaceted. In order to create a pathways to science program, Oak Crest worked with the City's Youth Employment Services (YES) Interns to develop curriculum for the Junior Researcher Academy (JRA). JRA is a two week program, offered three times throughout the summer for participants in $8^{th}$-$10^{th}$ grade. Up to 12 participants, per session, learn scientific skills and implement those skills in a challenging, fun, engaging laboratory. During the two week session, JRA participants worked in the lab during the morning and attended field trips in the afternoon. In order to create the pathways to science program, YES Interns worked with college interns and Oak Crest staff to develop the academy. The YES Interns, with assistances from the college students and Oak Crest staff, implemented the program for participants; creating the pathway to science model.

**ANALYSIS:** There were two key programmatic changes in 2019; the program fees increased and the age of participants changed slightly. The fees were adjusted from $40 per session to $100 per session to more fully cover the program expense. Based on observations made from both Oak Crest and City staff, the age of participants changed from $8^{th}$-$10^{th}$ grade to $7^{th}$-$9^{th}$ grade. This shift allowed for

participants in the program to continue in the pathway program by becoming a YES Intern when they reach 10th grade.

The following chart outlines the topics learned during the two week program.

| Topic | Description |
|---|---|
| Disease Detection | Simulated outbreak of a viral disease |
| DNA Fingerprinting | Dye DNA and analyze how it used to solve a crime |
| Cells | Investigate different types of cells and learn microscopy techniques to observe cells at a higher resolution |
| Ecology | Explore how organisms interact with their environment |
| Mixtures and Solutions | Explore different properties using chemistry concepts |
| State of Matter | Explore how matter can change from one state to another |
| Fluorescence | Explore the concert of fluorescence in the biological system |
| Blood Typing | Learn how to determine different blood types |
| Force and Motion | Different objects will be sued to explore the concepts of force and motion |

The next chart outlines the learning objects related to the topics learned.

| Learning Objectives | Description |
|---|---|
| Experimentation | Participants will explore how a scientific experience is conducted. Topics include hypotheses and theories, scientific tools and measurements, designing and conduction experiments. |
| Data Analysis | Participants will investigate how to use simple statistical tools to analyze data, describe the accuracy and precision of measurements, and represent data using graphs, charts, and scientific models. |
| Drawing Conclusions | Participants will discover how to research the work of previous scientists, evaluate evidence, draw conclusions from evidence, and present their results to others. |

The chart below outlines the fieldtrips for each session.

| Fieldtrip | Location |
|---|---|
| Oak Crest Tour | Monrovia |
| Fire Station 102 | Monrovia |
| Huntington Gardens Laboratory | Pasadena |
| California Science Center | Los Angeles |

The following chart outlines the program numbers/resident and non-resident numbers for each session for 2018 and 2019.

| 2018 Session Dates | Resident | Non-Resident* |
|---|---|---|
| Session 1: June 25 – July 6 | 8 | 4 |
| Session 2: July 9 – July 20 | 3 | 5 |
| Session 3: July 23 – August 3 | 1 | 4 |

**Non-residents were from Arcadia, Sierra Madre, Duarte, Pasadena, North Hollywood and Glendora*

| 2019 Session Dates | Resident | Non-Resident* |
|---|---|---|
| Session 1: July 1- July 12 | 7 | 5 |
| Session 2: July 15-July 26 | 7 | 4 |
| Session 3: July29-August 9 | 7 | 5 |

**Non-residents were from Hacienda Heights, Duarte, Temple City, Pasadena, Arcadia, Glendale, North Hollywood, El Monte, and Sierra Madre*

**FISCAL IMPACT:** The 2019 revenue and expenditures are outlined below.

| Revenue | 2018 Actuals | 2019 Projected | 2019 Actuals |
|---|---|---|---|
| Participation Fee | $1,000 | $5,000 | $5,000 |

| Expenditure | 2018 Actuals | 2019 Projected | 2019 Actuals |
|---|---|---|---|
| Clothing | $200 | $200 | $200 |
| Maintenance Supplies | $711 | $4,800 | $5,211 |
| **Totals** | **$911** | **$5,000** | **$5,411** |

| Program Budget Totals | 2018 Actuals | 2019 Projected | 2019 Actuals |
|---|---|---|---|
| Revenue | $1,000 | $5,000 | $5,000 |
| Expenditures | $911 | $5,000 | $5,411 |
| Net Cost | - | - | $411 |

**PROGRAM FEEDBACK:** Program staff met with the team from Oak Crest to discuss the program components from 2019 and evaluate what changes may be needed to further improve upon the successful program. Overall things are working well and the recommendations are minimal and more related to administrative efficiencies. The following list summarizes some of the changes being considered for the 2020 Junior Researcher Academy.

1. Host a Parent Orientation meeting to review the program prior to each session. Doing so will allow the parents to have a deeper appreciation for the types of activities being offered and share with them how they can further support the program at home.

2. Providing a more clear understanding of the participant behavioral expectations is needed. Developing a “letter of understanding” for the participants and parents, outlining the rules, expectations, learning outcomes, and attendance requirements will be developed.

3. More time for the participants to freely explore the laboratory and use their newly acquired skills is needed. Oak Crest staff will develop free exploration activities for participants to do when time allows. Participants will have an opportunity to use the tools in the laboratory during the free exploration.

4. Staff will look into the possibility of offering age specific sessions to ensure that participants are comfortable and working at their grade level. An example of this would be session 1, 7th graders; session 2, 8th graders; session 3, 9th graders.

**RECOMMENDATION:** Staff recommends the Community Services Commission move to receive and file CC-3, 2019 Junior Researcher Academy Evaluation.

**COMMISSION ACTION REQUIRED:** If the Community Services Commission concurs, the appropriate action would be motion to: Receive and file CC-3, 2019 Junior Researcher Academy Evaluation.