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## Annual Progress Report:

October 1, 2016 – September 30, 2017

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Other Personnel: Leslie-Porter-Cabell, Patricia Samperi, Derek Sokolowski, Erica Klafehn, and Ronald Pilette

Report Date: July 2017

As detailed in our first annual progress report dated 2006-2007, PRISM was established in fall 2006 to promote the expansion of undergraduate research in the science programs at John Jay College of Criminal Justice of The City University of New York (CUNY). In that first year, thirteen students shared in \$21,000 of funding. Now having completed its tenth year of operation, the program has greatly expanded and has had a profound influence on promoting undergraduate science research at the College. Since 2006, **over 250 undergraduate researchers and over 30 faculty members at John Jay and our partner community colleges** have benefitted from the opportunities PRISM provides them: mentored research with a faculty member, stipends, travel allowances for professional conferences, research supplies, state-of-the-art research instrumentation, professional advisement, seminars, professional development activities, and other benefits. Of these, **more than 30** students have transitioned to John Jay and PRISM from our CUNY Justice Academy (CJA) partners, a group of five CUNY community colleges that prepare students for our Forensic Science program, and almost twenty of these have been actively involved in research at John Jay and at their community colleges. **Eighty-seven of our alumni are enrolled or have finished post-graduate professional programs in Science, Technology, Engineering, and Math (STEM) and health-related fields.** Most importantly, all of them have greatly benefitted from the mentorship provided by faculty members of the Sciences, Math and other Departments here and at our CJA partner schools.

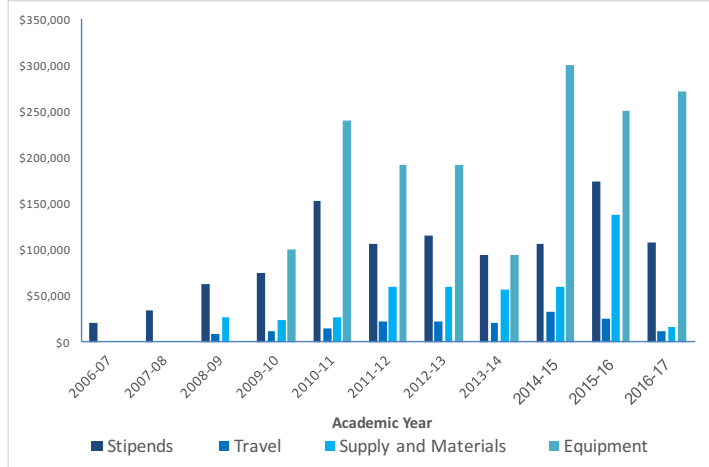
During the last two years, PRISM has continued to expand and has been restructured. In July of 2015 we were awarded a “Collegiate Science and Technology Entry Program” (CSTEP) grant from the New York State Education Department. This grant allows us to provide eligible students additional academic and financial support. To better organize our administrative efforts, PRISM now functions as an umbrella that covers various initiatives. Early career students, not yet paired in research mentorship, are part of our Junior Scholars Program (JSP), which is fully funded by CSTEP. PRISM JSP students receive targeted academic advisement, group study sessions organized by the Math and Science Resource Center (MSRC), and attend professional and academic development workshops throughout the year. The renamed, PRISM Undergraduate Research Program (URP), continues our successful efforts to pair students with mentors and prepare them for post-graduate education. We continue to support students coming to John Jay’s science majors through the CUNY Justice Academy, a cohort we call the CJA-FOS students, by providing help during the transition process, academic advisement, and encouragement to participate in mentored research experiences at their community colleges and at John Jay once they transition.

This year we celebrated our 10th Anniversary. We take this opportunity not just to update on what we did during the past year, but also on the impact PRISM has had on our students, and what we hope to accomplish next. PRISM has been, without doubt, a group effort that demonstrates what can be accomplished when an institution believes in its students and is willing to go the extra mile for (and with) them, and gives educators the right tools and the support.

## 2016-2017 Year Progress

In the 2016-2017 academic year, forty-five students shared \$108,150 of stipend support, \$16,353 in materials and supplies support, and \$11,183 in travel support (Fig. 1). In addition, PRISM made more than \$270,00 available to faculty and students in the Department of Sciences this year to update and upgrade research equipment used for research mentoring. Due to budget constraints, mentors did not receive travel support to accompany their mentees to research conferences.

Many John Jay College science majors and students from several CUNY community colleges were exposed to PRISM and the possibilities for undergraduate research via attendance at one or more PRISM events held throughout the year. Dozens



of parents, college administrators, departmental faculty, and members of the public attended various PRISM events, each headlining presentations of PRISM students' research efforts.

Figure 1. PRISM Budget Details

During the last ten years, PRISM has invested **over three million dollars** in our students, faculty, and in the enhancement of the research infrastructure at John Jay College (Fig. 1). These funds have allowed the College to obtain or update scientific equipment that has increased the capabilities of our institution to perform novel research in more diverse fields than ever before. It has also increased the visibility of our students, the Program, and the College nationally

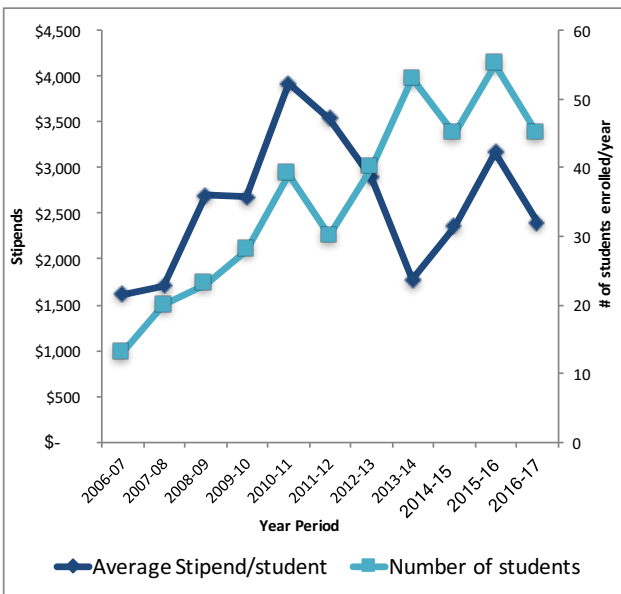


Figure 2. Number of PRISM Undergraduate Researchers by Academic Year vs. Average stipend/student

by supporting travel to research conferences where our undergraduate researchers communicate their findings. And the funds have allowed our faculty members to publish their research with students in peer-reviewed research journals. Most importantly, by providing stipends to our students, we have removed the need for most students to work outside of the College and thus enabled them to dedicate more time to their studies and research.

These funds have increased the quality of research performed by our students and the popularity of the Program among Forensic

Science students. About one third of graduates from the major participate in in-house research through PRISM.

The quality of undergraduate research continues to be excellent. Many students are authors or co-authors of research published this past year or currently in press, as noted in detail at the end of this report. Although the **average stipend our students received from 2011-2014 decreased**, the new CSTEP award allowed us to stabilize this amount to approximately \$2,500/student/year (Fig. 2). Our application to a DoE Title V HSI-STEM grant last year was not successful, which limits the support we can provide to students and mentors. We have now fewer funds for stipends, travel to conferences, and research supplies. This limits the research training and experiences our Undergraduate Researchers receive.

Our PRISM Junior Scholars Program provides academic advisement and support to students who are part of the science majors at John Jay but not part of URP. More than 55 students obtained tutoring (through the MSRC) and attended workshops on subjects such as: study habits, application to summer research programs, and other topics. Students received an average of 9.5 hours/student of tutoring throughout the year, and have received >\$21,000 in stipends.

## 2016-2017 Programmatic Efforts

To kick off our Tenth Anniversary, PRISM hosted a special Keynote Address on March 16, 2017 at John Jay by Dr. Larry Gladney, Associate Dean for Natural Sciences at University of Pennsylvania. He spoke about the role that cultural knowledge - knowledge of the behaviors and norms that are “expected” but not generally verbalized – has in achieving professional success. He emphasized that this knowledge is gained through experience, and that not having this type of knowledge should never stop us from attaining our goals, since it can be gained through experience and from mentors. More than 100 students and various members of the John Jay faculty and administration attended the lecture. In addition, Dr. Gladney spoke about his personal journey of development into a scientist with a small group of PRISM undergraduate researchers at a lunch on campus.

On October 11, 2016, and in collaboration with John Jay’s Center for Career & Professional Development, we hosted our first annual PRISM Professional Development Institute. This full-day event focused on the skills need to enter the

job market. Talks covered best practices to design your resume, writing a personal statement or cover letter, and the utilization of on-line job search engines, among others. The program was capped by a lunch panel of Human Resources professionals working in STEM industries who gave our students a view of the hiring process from the employer's side, and an opportunity for our students to receive personalized career counseling after completing the Strong Interest Inventory. More than 60 students took advantage of this opportunity.

Throughout the year we organize regular meetings, seminars, and workshops for our students. These included:

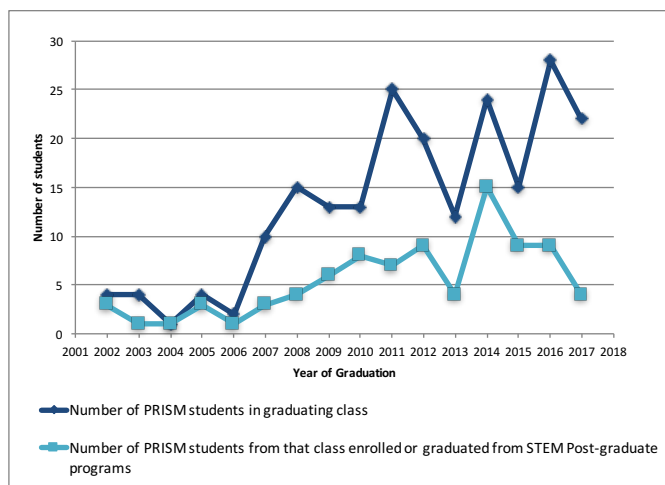
1. Monthly Meetings: These events are organized for our Undergraduate Research Program and feature speakers and recruiters from various post-graduate institutions like the Weill-Cornel Graduate School of Medical Sciences and the University of Pennsylvania.
2. Seminars: This year we kicked off a new series of seminars titled "Café con Science." For these seminars, current PRISM URP students, alumni, and faculty present their research findings to undergraduates enrolled in the Science Department over coffee and doughnuts.
3. Workshops: These events are organized to improve our students "soft-skills". Topics covered this year included professional etiquette and professional resume preparation for the Junior Scholars and Research Presentation Skills for the Undergraduate Researchers.
4. Boot Camps: Designed to be an immersive experience on how to effectively communicate your science at scientific conferences, we hosted sessions before participating in various conferences, like the 2016 SACNAS National Diversity in STEM Conference and the 2017 CSTEP Statewide Conference.
5. Outreach to CJA students: These activities introduce forensic science students who are part of the CUNY Justice Academy to John Jay and PRISM. Visits to the Office of the Chief Medical Examiner of NYC, and a screening of "Hidden Figures," were among this year's activities. In addition, faculty from our Science Department presented research talks at various CJA partner institutions.

We held our Tenth Annual John Jay College PRISM Undergraduate Research Symposium on May 4, 2017 as part of the annual college-wide *Celebrating Student Research & Creativity* week. More than 200 students, faculty, and administrators attended the event. The 2017 Symposium featured talks from John Jay alumni **Christopher Pedigo, Ph.D.** and our 2017 Outstanding

Undergraduate Researcher, **Ronal Peralta** (from A. Carpi's lab). More than 40 students presented their research in poster presentations. **Jeanine Day** (co-mentored by L. Rourke, N. Petraco, and P. Diaczuk) and **Julia Kakhnovich** (from N. Lent's lab) were the recipients of PRISM's Outstanding Poster Award.

## Graduate and Professional School Enrollment and Other Student Achievements

As noted in Fig. 3, about one third of students graduating from the Program are admitted to graduate or professional programs in STEM disciplines within 2-3 years of obtaining their John Jay degrees. Although research programs at other institutions can claim larger percentages of students/alumni enrolled in graduate STEM programs, those programs generally limit admission only to students with strong high school preparation and who express interest in pursuing Ph.D.'s or MD/Ph.D.'s, **we do not limit in this way.** We remain committed to providing research opportunities to talented students, regardless of their professional aspirations or pre-college preparatory experiences.



**Figure 3. Participation in PRISM and students enrolling in post-graduate STEM, health, and science-education programs**

At this point, we have identified **87 PRISM graduates** who are in or have completed graduate or professional programs. Several remain in active contact with our program and have welcomed contact from our current PRISM students. Contributing to the positive outcomes of the program, **10 PRISM graduates** started post-graduate programs in the fall of 2017 (See Appendix, Table 1) and our students have received acceptances to **10 summer research programs or internships** outside John Jay in the summer of 2017 (see Appendix, Table 2).

For a third consecutive year, PRISM students have brought back national and/or state-wide research presentation awards from undergraduate research conferences. Josephine Guo was awarded a SACNAS National Research Presentation Award for her poster "The Effect of Substrate and Ozone Concentrations on Mercury Flux from Mercury (II) Chloride Spiked Samples." At the 2017 CSTEP Statewide Conference, our students secured two First Place and two Honorable Mentions for oral and poster research presentations. More than 20 of our students received awards, scholarships, and fellowships throughout the year, from organizations like the Hecht Foundation, the Jack Kent Cooke Foundation, the Ronald McDonald Foundation, and the John Jay Foundation. Below are some examples:

### ***Awards, Fellowships, and other Honors***

- **Josephine Guo** - Society for the Advancement of Chicanos/Hispanics and Native Americans in Science – National Research Presentation Award (Environmental Science)
- **Erica Fontanes and Brianna Cingari** – Collegiate Science and Technology Entry Program – 1st place Statewide Research Presentation Award (Chemistry);
- **Rabia Javed** – Collegiate Science and Technology Entry Program – 1st place Statewide Research Presentation Award (Environmental Science)
- **Zenab Khan and Donovan Trinidad**– Collegiate Science and Technology Entry Program – Honorary Mention Statewide Research Oral Presentation Award (Life Sciences);
- **Daysi Proano**– Collegiate Science and Technology Entry Program – Honorary Mention Statewide Research Presentation Award (Biochemistry);
- **O'Jay Stewart, Veronika Yakovishina, and Ronal Peralta** - Travel Awards to attend the 2016 Annual Biomedical Research Conference for Minority Students;
- **Veronika Yakovishina** - a Pfizer Travel Award to attend the 2017 Society of Toxicology Conference.
- **Donovan Trinidad** - National Institute for General Medical Sciences - Initiative for Maximizing Student Development (IMSD) Fellowship;
- **Rabia Javed, Zenab Khan, Merima Mustajbasic Stephanie Marino and Alexa DeJesus** - Hoover Fellowships;
- **Zenab Khan** - recipient of John Jay's Alexander Joseph Memorial Award, which is given to the forensic Science graduating senior with the highest GPA at Commencement.

## Near- and Long-Term Goals

Having celebrated our Tenth Anniversary, we hope to maintain and expand the support we provide to our students, faculty, and the College at large. We believe that PRISM's success is due to the three core principles:

1. Supplying undergraduate research experiences to our students provides them with opportunities for technical and intellectual growth as well as strong and nurturing mentor-mentee relationships that positively impact their professional as well as their personal lives.
2. Providing support for our faculty mentors creates a strong community of academic researchers, which expands the opportunities available to our students.
3. Developing a "PRISM identity" in our undergraduate researchers helps them develop a strong sense of community within themselves, which enhances their experience at John Jay by providing them with tools to help each other succeed.

Over the next year, we will be adopting changes to our Undergraduate Research Program that will further improve our students' experience in the program while simplifying its administration. To increase the visibility of PRISM, this year we partnered with the John Jay Office of Marketing and Development to develop materials about the program that can be used for fundraising and to communicate the purpose and outcome of the program to potential partners. We hope to advance this process with the College in the coming year. We are developing formal partnerships with various companies and research institutes (BASF and The Broad Institute, for example) to secure internships for our students. We will also integrate *AdviseStream*, a digital pre-professional advisement platform adopted by the College after its successful deployment to our pre-health students, starting with our PRISM Junior Scholars Program this coming year. Finally, we have begun a formal search for a Research & Outreach Coordinator that will cement the position within PRISM and at the College. This professional will be responsible for coordinating outreach to our partner community colleges and will be responsible of the Junior Scholars programmatic efforts, in addition to providing pre-professional advisement to our Undergraduate Researchers.



## Appendix

**Table 1.** PRISM students and alumni matriculated into professional STEM/Health programs in 2017

Year of Graduation	Name	Matriculated to	Year of Matriculation	Mentor
2014	Keisha Alexander	University of Colorado at Denver, Ph.D. Program in Pharmacology	Fall 2017	Rauceo
2017	Victoria DePrimo	University of New Haven, Master's Program in Forensic Sciences	Fall 2017	Corthals
2015	Stephania Guzman	Rutgers University, Ph.D. Program in Molecular Biosciences	Fall 2017	Lents
2015	Richard Kushial	Mercer University, Ph.D. Program in Pharmaceutical Sciences	Fall 2017	Carpi
2015	Yessenia Lopez	Weill Cornell Graduate School of Medical Sciences, Ph.D. Program in Physiology, Biophysics & Systems Biology	Fall 2017	Cheng
2017	Ronal Peralta	University of Pittsburgh School of Medicine, Ph.D. Program in Microbiology & Molecular Genetics	Fall 2017	Carpi
2016	Ronald Rodriguez	University of California at Berkely, Ph.D. Program in Microbiology	Fall 2017	Rauceo
2017	O'Jay Stewart	Icahn School of Medicine at Mount Sinai, Post-Baccalaureate Research Education Program (PREP)	Fall 2017	Domashevskiy
2017	Donovan Trinidad	University of California at San Francisco, Ph.D. Program in Biomedical Sciences	Summer 2017	Lents
2017	Khamattie Uzagir	Long Island University, Pharm.D. at the The Arnold and Marie Schwartz College of Pharmacy	Fall 2017	Champeil

**Table 2. PRISM students and alumni attending summer research programs outside John Jay in 2017**

Name	Program	Mentor
Dee-Anne Cush	Summer Undergraduate Research Program (SURP) at Albert Einstein College of Medicine	Corthals
Hannah Chu	Summer Research Scholars Program at Cornell University	Rosati
Jake Aquilina	Cross-Disciplinary Training in Sustainable Chemistry and Chemical Processes at Michigan State University	Zhang
Joseph Vandenburg	Internship at the Suffolk County Crime Laboratory	Diaczuk/ Yaverbaum
Junior Cadet	Internship at the Westchester County Forensics Laboratory	Proni
Marissa Cofane	Internship at the Drug Enforcement Administration, New York Division	Diaczuk/ Yaverbaum
Michael Muyalde	The Northeast Regional Alliance (NERA) MedPrep Program at Columbia University	Delgado-Cruzata
Rabia Javed	CUNY Summer Undergraduate Research Program at the Advanced Science Research Center	Cheng
Veena Mehta	Department of Energy's Environmental Management MSIPP at Argonne National Laboratories	Rosati
Veronika Yakovishina	The Leadership Alliance - Summer Undergraduate Internship Program at University of Pennsylvania	Cheng
Yoselyn Paucar	The Leadership Alliance - Summer Undergraduate Internship Program at University of Pennsylvania	Rosati

**Table 3. PRISM Undergraduate Researchers, 2016-17**

Last Name	First Name	Mentor(s)	# of terms funded	Status	CJA Researcher/ Comment
Akerman	Tova	Li	1	Currently Enrolled	
Albarracin	Maria	Delgado-Cruzata	1	Currently Enrolled	
Almodovar	Nickolas	Roberts	1	Currently Enrolled	
Anson	Rebecca	Prinz	1	Currently Enrolled	
Aquilina	Jake	Zhang	1	Currently Enrolled	

Berry	Rageene	Concheiro-Guisan	2	Currently Enrolled	
Blandino	Vincent	Concheiro-Guisan	4	Graduated Spring 2017	
Bliese	Alorah	Delgado-Cruzata	4	Graduated Spring 2017	
Browne	Tebah	Prinz	3	Currently Enrolled	Co-funded with McNair
Buvasheva	Bella	Li	1	Currently Enrolled	
Cadet	Junior	Proni	3	Currently Enrolled	
Centazzo	Nicole	Concheiro-Guisan	1	Currently Enrolled	
Chang	Anthony	Zhang	1	Currently Enrolled	
Chu	Hannah	Rosati	2	Currently Enrolled	
Cingari	Brianna	Proni	3	Graduated Spring 2017	
Cofane	Marissa	Diaczuk/Yaverbaum	5	Currently Enrolled	
Cush	Dee-Anne	Corthals	3	Currently Enrolled	
Day	Jeanine	Diaczuk/Rourke	6	Graduated Spring 2017	
DeJesus	Alexa	Proni	3	Currently Enrolled	
DePrimo	Victoria	Corthals	4	Graduated Spring 2017	
Duran	Lisset	Delgado-Cruzata	5	Currently Enrolled	Co-funded with LSAMP
Farmer	Margaret	Corthals	4	Currently Enrolled	
*Faure - Betancourt	Maria Alejandra	Li	4	Currently Enrolled	Transferred from BMCC
Fontanes	Erica	Proni	6	Graduated Spring 2017	
Fragale	Joseph	Rosati	4	Currently Enrolled	
*Frederik	Bonnie-Marie	Concheiro-Guisan	1	Currently Enrolled	Transferred from QCC
Guo	Josephine	Carpi	5	Graduated Spring 2017	
Heredia	Marienela	Rauceo	1	Currently Enrolled	

Herrera	Rixsi	Rosati	1	Currently Enrolled	
Huang	Brady	Petraco	1	Currently Enrolled	
Jaquez	Enil	Proni	4	Currently Enrolled	
Javed	Rabia	Cheng	2	Currently Enrolled	
Kakhnovich	Julia	Lents	4	Graduated Spring 2017	
Khan	Zenab	Lents	5	Graduated Spring 2017	
Khoja	Sarah	Ahmad	1	Graduated Spring 2017	
Kiss	Julie	Corthals	1	Currently Enrolled	
Kosakowski	April	Carpi	3	Currently Enrolled	
Lee	Ji-Young	Cheng	1	Currently Enrolled	
Mahon	Glen	Diakzuk/ Rourke	5	Graduated Spring 2017	
Marino	Stephanie	Rosati	2	Currently Enrolled	
Maynard	Darrien	Carpi	3	Currently Enrolled	
Mehta	Veena	Rosati	4	Currently Enrolled	
*Mendoza	Ana	Carpi	4	Graduated Spring 2017	Transferred from BMCC
Mercado	Annabell	Delgado-Cruzata	4	Graduated Fall 2016	
Montes	Jazlene	Cheng	10 or more	Graduated Spring 2017	
*Morales	Elmer	Concheiro-Guisan	5	Graduated Spring 2017	Transferred from BMCC
*Mustajbasic	Merima	Carpi	1	Currently Enrolled	Transferred from BMCC
Muyalde	Michael	Delgado-Cruzata	6	Currently Enrolled	
Paucar	Yoselin	Rosati	2	Currently Enrolled	
Peralta	Ronal	Carpi	7	Graduated Spring 2017	
Phoenix	Tonya	Zhang	8	Graduated Spring 2017	

*Proano	Daysi	Rauceo	3	Graduated Spring 2017	Transferred from QCC
*Romero	Ruth	Roberts	2	Graduated Spring 2017	Transferred from HCC
Samuels	Kelley	Korobkova	1	Currently Enrolled	
Stewart	O'Jay	Domashevskiy	6	Graduated Spring 2017	
Trinidad	Donovan	Lents	4	Graduated Spring 2017	
Urbano Molina	Kevin	Carpi	3	Graduated Spring 2017	
Vandenburgh	Joseph	Diaczuk/ Yaverbaum	6	Currently Enrolled	
Vargas	Anayatzinc	Champeil/ Cheng	1	Currently Enrolled	
Williams	Ti-Niece	Rauceo	1	Currently Enrolled	
Wong	Bokey	Korobkova	1	Currently Enrolled	
*Yakovishina	Veronika	Cheng	6	Currently Enrolled	Transferred from QCC
Zacarias	Owen	Champiel	4	Currently Enrolled	
*Zhang	Yuan zhuo	Zhang	7	Graduated Spring 2017	Transferred from KCC
Zheng	Maggie	Champeil	1	Currently Enrolled	

\* Denotes a student part of the CUNY Justice Academy

**Table 4. Students Participating in PRISM Research Training Workshops  
May 2017**

Last Name	First Name	Mentor(s)
Akerman	Tova	Li
Albarracin	Maria	Delgado-Cruzata
Almodovar	Nickolas	Roberts
Anson	Rebecca	Prinz
Aquilina	Jake	Zhang
Centazzo	Nicole	Concheiro-Guisan
Chang	Anthony	Zhang
*Frederik	Bonnie-Marie	Concheiro-Guisan

Heredia	Marienela	Rauceo
Herrera	Rixsi	Rosati
Huang	Brady	Petraco
Kiss	Julie	Corthals
*Mustajbasic	Merima	Carpi
Vargas	Anayatzinc	Champeil/Cheng
Williams	Ti-Niece	Rauceo

\* Denotes a student from the CUNY Justice Academy

**Table 5. PRISM Junior Scholars**

Last Name	First Name	Class Standing	Major
Albarracin	Maria	Senior	Cell & Molecular Biology
Almodovar	Nickolas A.	Freshman	Forensic Science
Aquilina	Jake	Sophomore	Forensic Science
Astudillo	Ashley N.	Sophomore	Forensic Science
Aviles	Mariela	Junior	Cell & Molecular Biology
Carroo	Njeri	Senior	Forensic Science
Cedillo	Ines	Freshman	Forensic Science
Chang	Anthony	Senior	Forensic Science
Chen	Andy	Freshman	Forensic Science
DaSilva	Hadler	Senior	Forensic Science
Davis	Keziah	Junior	Forensic Science
Drakes	Sangia	Junior	Computer Science & Information Security
Duran	Lisset	Junior	Cell & Molecular Biology
Elva	Stevieanna	Sophomore	Cell & Molecular Biology
Feliciano	Dominique	Junior	Cell & Molecular Biology
Ishola	Antonia	Junior	Forensic Science
Jenkins	Jenna J.	Freshman	Forensic Science
Kong	Maddie Yi Lin	Sophomore	Forensic Science
Li	Kristy	Sophomore	Computer Science & Information Security
Lorna	Jeremy	Freshman	Cell & Molecular Biology
Lu	Ying Yin	Sophomore	Cell & Molecular Biology
Marte	Kristen	Freshman	Forensic Science
Muntu	Intan	Junior	Forensic Science

Nolasco	Santos	Freshman	Forensic Science
Obeng	Linda	Freshman	Forensic Science
Onwuchekwa	Chinyere	Senior	Cell & Molecular Biology
Pimentel Neddal	Jazmin	Freshman	Forensic Science
Proano	Daysi	Senior	Cell & Molecular Biology
Ramkhellawan	Vicicia	Senior	Forensic Science
Rizvi	Ayesha	Sophomore	Computer Science & Information Security
Serrano	Jerel P	Junior	Forensic Science
Spatola	Francesca	Sophomore	Forensic Science
Tejada	Pak Harry	Senior	Cell & Molecular Biology
Vinas	Katty	Sophomore	Forensic Science
Weathers	Tianna	Freshman	Forensic Science
Zamora	Naomi	Freshman	Forensic Science
Zheng	Maggie Chuying	Junior	Forensic Science

## Publications

### 2015-2016

1. Aitbakieva\*, V. R., & Domashevskiy, A. V. (2016). Comparison of Enzymatic Activities of Pokeweed Antiviral Protein (PAP) Isoforms toward RNA from the Tobacco Etch Virus. *The FASEB Journal*, 30(1 Supplement), 1083-12.
2. Champeil, E., Cheng, S. Y., Huang\*, B. T., Conchero-Guisan, M., Martinez, T., Paz, M. M., & Sapse, A. M. (2016). Synthesis of Mitomycin C and Decarbamoylmitomycin C N 2 deoxyguanosine-adducts. *Bioorganic chemistry*, 65, 90-99.
3. Cheng, S. Y., Seo\*, J., Huang\*, B. T., Napolitano\*, T., & Champeil, E. (2016). Mitomycin C and decarbamoyl mitomycin C induce p53-independent p21WAF1/CIP1 activation. *International Journal of Oncology*, 49(5), 1815-1824.
4. Domashevskiy, A. V., Rodriguez\*, D. J., Gunawardana, D., & Goss, D. J. (2016). Preparation of Functional, Fluorescently Labeled mRNA Capped with Anthraniloyl-m 7 GpppG. *Synthetic mRNA: Production, Introduction into Cells, and Physiological Consequences*, 61-75.

5. Li, L., Zhang\*, Y. Z., Liu, E., Yang, C., Golen, J. A., Rheingold, A. L., & Zhang, G. (2016). Synthesis and structural characterization of zinc (II) and cobalt (II) complexes based on multidentate hydrazone ligands. *Journal of Molecular Structure*, 1110, 180-184.
6. Li, L., Zhang\*, Y. Z., Yang, C., Liu, E., Golen, J. A., & Zhang, G. (2016). One-dimensional copper (II) coordination polymers built on 4'-substituted 4, 2': 6', 4''-and 3, 2': 6', 3''-terpyridines: Syntheses, structures and catalytic properties. *Polyhedron*, 105, 115-122.
7. Piszczatowski\*, R. T., & Lents, N. H. (2016). Regulation of the CCN genes by vitamin D: A possible adjuvant therapy in the treatment of cancer and fibrosis. *Cellular Signalling*, 28(10), 1604-1613.
8. Piszczatowski\*, R. T., Rafferty, B. J., Rozado\*, A., Parziale\*, J. V., & Lents, N. H. (2015). Myeloid Zinc Finger 1 (MZF-1) Regulates Expression of the CCN2/CTGF and CCN3/NOV Genes in the Hematopoietic Compartment. *Journal of Cellular Physiology*, 230(11), 2634-2639.

## 2016-2017

1. Aitbakieva\*, V. R., & Domashevskiy, A. V. (2016). Insights into the Molecular Antiviral Mechanism of Pokeweed Protein from *Phytolacca americana*. *Biochem Pharmacol (Los Angel)*, 5(210), 2167-0501.
2. Johnson, H. R., Trinidad\*, D. D., Guzman\*, S., Khan\*, Z., Parziale\*, J. V., DeBruyn, J. M., & Lents, N. H. (2016). A machine learning approach for using the postmortem skin microbiome to estimate the postmortem interval. *PLoS one*, 11(12), e0167370.
3. Li, L., Zhang\*, Y. Z., Yang, C., Liu, E., Fettingner, J. C., & Zhang, G. (2016). Two polymorphs of 4-(4-hexyloxyphenyl)-2, 6-di (pyrazin-2-yl) pyridine and the crystal structure of its copper (II) complex. *Journal of Molecular Structure*, 1110, 19-23.
4. Liu, E., Xiong, H., Li, L., Yang, C., Yin, Z., Chang\*, A., Manke, D., Golen, J., & Zhang, G. (2017). Facile synthesis of new divergent imidazole-containing ligands for a 1-D cobalt (II) coordination polymer. *Polyhedron*, 127, 355-360.
5. Napolitano\*, T., Cheng, S. Y., Nielsen\*, B., Choi, C., Aguilar\*, W., Paz, M. M., Sapse, A. M. & Champeil, E. (2017). Acetone promoted 1, 4-migration of an alkoxy carbonyl group on a syn-1, 2-diamine. *Tetrahedron Letters*, 58(7), 597-601.
6. Xiong, H., Li, L., Liu, E., Yang, C., Zhang\*, Y. Z., Fettingner, J. C., & Zhang, G. (2017). Silver (I) coordination polymers with thioether ligands: The influence of fluoro-substitution. *Polyhedron*, 126, 268-275.



7. Xiong, H., Li, L., Liu, E., Yang, C., Zhang\*, Y. Z., Fettinger, J. C., & Zhang, G. (2017). Anion-dependent assembly of diverse 1D–3D silver (I) coordination networks with a thioether ligand. *Polyhedron*, 123, 226-233.

## Conference Presentations and Abstracts

### 2016 SACNAS National Diversity in STEM Conference, Long Beach CA

1. Peralta\*, R., Carpi, A. "Using Moss as a Biomonitor to Detect Atmospheric Sources of Mercury," 2016 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) National Diversity in STEM Conference, Long Beach, CA; October 13-15, 2016.
2. Aguilar\*, W., Champeil, E. "Synthesis of MC and DMC Deoxyguanosine Adducts," 2016 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) National Diversity in STEM Conference, Long Beach, CA; October 13-15, 2016.
3. Trinidad\*, D., Guzman, S., Kahn, Z., Lerer, A., Parziale, J., Lents, N. "Using the Human Skin Necrobiome to Estimate the Postmortem Interval," 2016 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) National Diversity in STEM Conference, Long Beach, CA; October 13-15, 2016.
4. Guo\*, J., Kosakowski, A., Mann, E., Carpi, A. "The Effect of Substrate and Ozone Concentrations on Mercury Flux from Mercury (II) Chloride Spiked Samples," 2016 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) National Diversity in STEM Conference, Long Beach, CA; October 13-15, 2016.
5. Mendoza\*, A., Mann, E., Carpi, A. "Detecting an Atmospheric Mercury Pollution Source using Moss as a Biomonitor," 2016 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) National Diversity in STEM Conference, Long Beach, CA; October 13-15, 2016.

### 2017 Collegiate Science and Technology Entry Programs Conference, Lake George, NY

1. Proano\*, D. V., Rauceo, J. "Association of Transcription Factor Rlm1 in the *Candida albicans* Psk1-Sko1 Signaling Pathway," 2017 Collegiate

- Science and Technology Entry Program (CSTEP) Conference, Bolton Landing, NY; April 7-9, 2017.
2. Browne\*, T., Mechthild, P. "Signature Peptide Detection for Body Fluid Identification by Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)," 2017 Collegiate Science and Technology Entry Program (CSTEP) Conference, Bolton Landing, NY; April 7-9, 2017.
  3. Cingari\*, B., Fontanes\*, E., Proni, G. "Separation and Spectroscopical Characterization of Ruelene," 2017 Collegiate Science and Technology Entry Program (CSTEP) Conference, Bolton Landing, NY; April 7-9, 2017.
  4. Javed\*, R., Cheng, SY. "Effect of Thymoquinone on Maneb and Mancozeb Induced Cytotoxicity," 2017 Collegiate Science and Technology Entry Program (CSTEP) Conference, Bolton Landing, NY; April 7-9, 2017.
  5. Trinidad\*, D., Khan\*, Z., Lents, N. "A Machine Learning Approach for Using the Postmortem Skin Microbiome to Estimate the Postmortem Interval," 2017 Collegiate Science and Technology Entry Program (CSTEP) Conference, Bolton Landing, NY; April 7-9, 2017.

### Other Conferences

1. Browne\*, T., Concheiro-Guisan, M., & Prinz, M. "Signature Peptide Detection for Body Fluid Identification by Liquid Chromatography Tandem Mass Spectrometry," 2017 SAEOPP McNair/SSS Scholars Research Conference. Atlanta, GA; June 2017
2. Stewart, O., Domashevskiy, A.V. (2017) "Biophysical Studies of Liposome Encapsulated Pokeweed Antiviral Protein and Its Use as HIV Therapeutic". Biophysical Society 61st Annual Meeting, New Orleans, LA, February 2017.
3. Stewart, O., Domashevskiy, A.V. (2016) "Biophysical Studies of Liposome Encapsulated Pokeweed Antiviral Protein for HIV Therapeutics". Annual Biomedical Conference for Minority Students, Tampa, FL November 2016.
4. Yakovishina V., Simone N. and Cheng S.Y. (2017) Involvement of p53 and p2111 in maneb and mancozeb induced senescence. 56th Society of Toxicology annual meeting, ABS#2650, Baltimore, MD, March 12-16

### Presentations at the 2017 PRISM Undergraduate Research Symposium

1. Benoit<sup>†</sup>, V., Graziano, J. "Arsenic in Rice: A Cause for Concern," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.

2. Berry\*, R., Conchiero-Guisan, M. "Wastewater-based Epidemiology of Tobacco and Illicit Drugs in New York City," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
3. Blandino\*, V., Conchiero-Guisan, M. "Analytical Technique Analytical Technique to Detect Synthetic Cannabinoids in Oral Fluid Samples of HIV Infected Individuals," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
4. Bliese\*, A., Delgado-Cruzata, L. "Studying the Effects of Methotrexate, an Anti-Inflammatory Drug, in DUSP22 Phosphatase Regulation in Breast Cancer," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
5. Browne\*, T., Conchiero-Guisan, M., Prinz, M. "Signature Peptide Detection for Body Fluid Identification by Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
6. Chu\*, H., Paucar\*, Y., Rosati, J. "The Diversity of Forensically Important Flies in Manhattan," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
7. Cingari\*, B., Fontanes\*, E., Proni, G. "Separation and Spectroscopical Characterization of the Organophosphate Ruelene," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
8. Cofane\*, M., Vandeburgh\*, J., Yaverbaum, D. "Modeling Relativity through 3-D Animation & Gaming," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
9. Cush\*, D. A., Onwuchekwa, C., Katamani, B., Corthals, A. "Detecting the Presence of Zoonotic Diseases Molecules in Highly Decomposed or Highly Processed Remains," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
10. daSilva<sup>†</sup>, H.A., Divjan, A., Perzanowski, M. "Allergen Exposure in NYC Subway Trains," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
11. Day\*, J., Rourke, L., Petraco, N., Diaczuk, N., "Estimating Bullet Angle using a Trigonometric Method," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
12. DeJesus\*, A., Cadet, J., Proni, G. "Developments of New Reagents for the Detection of Latent Fingerprints on Porous Surfaces," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.

13. DePrimo\*, V., Petraco, N., Corthals, A. "Bone Density and its Effect on Mark Width," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
14. Diaz†, J., Santella, R. M. "Development of an Immunoassay to Test 1-hydroxypyrene Levels in HEALS," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
15. Duran\*, L., Delgado-Cruzata, L. "Knockdown of DNA Methyltransferase 1, DNMT1, Causes Suppression of BRCA1 Expression in Breast Cancer Cells," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
16. Farmer\*, M., Corthals, A. "Human Bone Morphology Examined with Structure from Motion 3D Rendering," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
17. Faure-Betancourt\*, M.A., Li, R. "Identification of Diatom Species in New York City Waters for Drowning Investigations," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
18. Gonzalez†, D., Herbstman, J. "Breastfeeding and Reduced Risk for Breast Cancer," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
19. Guo\*, J., Kosakowski\*, A., Mann, E., Carpi, A. "The Effect of Water on Mercury Flux from Mercury (II) Chloride Spiked Substrate and Soil Samples," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
20. Jaquez\*, E., Zagraniczny, K., Proni, G. "Synthesis of New LawsONE's Derivatives," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
21. Javed\*, R., Cheng, SY. "Effect of Thymoquinone on Maneb and Mancozeb Induced Cytotoxicity," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
22. Kakhnovich\*, J., Lents, N. "*trnL-trnF* Gene Sequences as a Tool for the Identification of Plant Residue in Forensic Investigations," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
23. Khan\*, Z., Trinidad, D., Johnson, H., Lents, N. "A Machine Learning Approach for Using the Postmortem Skin Microbiome to Estimate the Postmortem Interval," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
24. Mahon\*, G., Rourke, L., Diaczuk, P. "Examination of Rib Marks and Radial Fractures on Broken Glass After a Ballistic Event," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.

25. Maynard\*, D., Urbano-Molina\*, K., Mann, E., Carpi, A. "The Effect of Water on Mercury Flux from Mercury (II) Chloride Spiked Sand Samples," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
26. Mehta\*, V., Fragale\*, J., Rosati, J. "Isolation of Resource and Oviposition Cues in Blow Flies," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
27. Mendoza\*, A., Peralta, R., Mann, E., Carpi, A. "Moss: A Biomonitor for Atmospheric Mercury Pollution," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
28. Montes\*, J., Cheng, SY. "The Effects of Dithiocarbamate Pesticides on Signaling Pathways in Alzheimer's Disease," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
29. Morales\*, E., Conchiero-Guisan, M. "Cannabis Determination in Hair by Liquid Chromatography Tandem Mass Spectrometry," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
30. Muyalde\*, M., Duran, L., Delgado-Cruzata, L. "Measuring DNA Methyltransferase Activity in Breast Cancer Cells," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
31. Perez<sup>†</sup>, B., Jack, D. "Investigating the Effects of Particulate Matter Exposure on the Cardiovascular Health of Biking Commuters," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
32. Phoenix\*, T., Zhang, G. "Fluorescent Metal-Terpyridine Complexes as Probes for Toxic Heavy Metals," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
33. Proano\*, D. V., Rauceo, J. "Association of Transcription Factor Rlm1 in the *Candida albicans* Psk1-Sko1 Signaling Pathway," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
34. Sanchez<sup>†</sup>, S., Lieberman, H., Broustas, C. "Mek5 Downregulation Promotes Radiosensitivity in Prostate Cancer Cells," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
35. Stewart\*, O., Domashevskiy, A. "Biophysical Studies of Liposome Encapsulated Pokeweed Antiviral Protein and Its Use as HIV Therapeutic," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
36. Trinidad\*, D., Khan, Z., Johnson, H., Lents, N. "A Machine Learning Approach for Using the Postmortem Skin Microbiome to Estimate the Postmortem Interval," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.

37. Yakovishina\*, Y., Cheng, SY. "Involvement of p53 and p21 in Maneb and Mancozeb Induced Senescence," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
38. Zacarias\*, O., Champeil, E. "Investigation of a New DMC-DNA Monoadduct," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.
39. Zhang\*, Y.Z., Xiong, H., Li, L., Yang, C., Zhang, G. "Silver(I) Coordination Polymers with Thioether Ligands: Influence of Fluoro-substitution," PRISM Undergraduate Research Symposium, New York, NY; May 4th, 2017.

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