

Developmental Funds

Eileen White, PhD

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RUTGERS
Cancer Institute
of New Jersey
RUTGERS HEALTH

NCI Comprehensive
Cancer Center
A Cancer Center Designated by the
National Cancer Institute



Developmental Funds Responsibility



Eileen White, PhD

Deputy Director

Board of Governors Professor, Molecular Biology and Biochemistry,
Rutgers University

Associate Director, Ludwig Princeton Branch,
Princeton University

Mission

To strategically allocate developmental funds from diverse sources to stimulate and advance innovative and collaborative cancer research

Developmental Funds Aims



Support for Innovative Research: Pilot awards in areas of scientific or strategic focus that promote collaboration, address CA priorities, and capitalize on the consortium

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1

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AIM
2

Targeted Recruitment: Diverse, outstanding, oncology-focused investigators aligned with Research Programs, with demonstrable success throughout training/early scientific careers

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AIM
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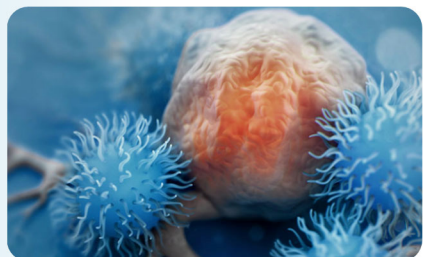
Oversight and Strategic Assessment: Invest strategically to achieve strategic plan goals; monitor outcomes to guide future allocation of funds and maximize return on investment

Use and Allocation in Current Grant Period



Developed Innovative Shared Resources

- Immune Monitoring (culminated in new Immune Monitoring and Flow Cytometry SR)
- Small Molecule Screening (culminated in agreement with Princeton for CINJ-selected projects)



Awarded Array of Pilot Projects

- Basic, clinical, and population research
- Seeding translational research
- Addressing catchment area priorities
- Strengthening the consortium with Princeton University
- Seeding multi-PI applications



Recruited Research Faculty

- New Investigator Awards promoted engagement of cancer focused investigators
 - Across all basic and population research programs
 - Throughout the consortium



Strengthened Impact of Consortium

- Collaborative awards to PU/RU collaborators
- Engagement of cancer-focused investigators in strategic scientific areas to Princeton University

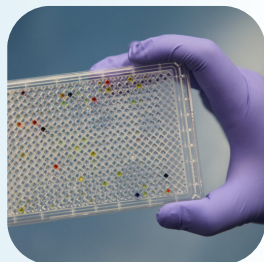
≡ Response to Prior Critique

Scored **Outstanding**



New Investigator Awards in Strategic Areas of Priority

- New Investigators engaged in all Research Programs (CIPT through other funding mechanisms)
- Recruitment into strategic areas of focus, e.g., immunology



Optimize Impact of Small Molecule Screening

- SMS important to the Research Programs, especially Cancer Pharmacology
- Typical Shared Resource structure not optimal for Project success
- CINJ sponsors promising, cancer-focused projects, assists with pre-screen readiness

Strategic Goals and Peer-Review Process

RFAs Reflect Strategic Goals

- Stimulate collaborations across the consortium
- Support development of large multi-PI grant applications
- Produce innovative research and interventions in cancer survivorship
- Foster collaborations that impact cancer burden, disparities, and health equity
- Promote translational research

Peer-Review Process

- 1^o and 2^o reviewers, study section, priority scores
 - Cancer Health Equity Center of Excellence and CPC reviews include 2 faculty and 1 patient advocate from new Community Scientist Program as reviewers
- Recommendations to Research Leadership Council
- RLC recommendations to Center Director



≡ Pilot Award Impact

47 Awards

28 completed, 19 Awarded in Last ~14 Months



Strong Financial ROI

Metric: Peer Reviewed, Cancer Focused Funding



- Over 20 Publications
- 8 Clinical Trials Activated
- 3 Patents Filed
- 29 Trainees Mentored
- 25 Catchment Area Responsive Projects
- Community Outreach and Bidirectional Communication
- Potential Policy Impact

Innovative Pilot Projects: Selected Examples



Langenfeld
(CIPT)

Developing Bone Morphogenetic Receptor II Inhibitors for the Treatment of Cancer

- NCI Award **3R01CA225830-02S1**
- REACH Pilot Award



Pine
(former GICG)

Genomic Contributors to Lung Cancer Health Disparities

- Publication: *Journal of Thoracic Oncology* 2020
- NCI Award **R01CA239093**



De
(GICG)



Raphael
(GICG)

Massively Parallel Single Cell DNA Sequencing to Study Dynamics of Pancreatic Cancer Progression

- Two Patents
- Trainee Mentorship
- Publications: *Nucleic Acids Res* 2022; *Am J Physiol Cell Physiol* 2021; *Phys Biol* 2021; *Nature Biotech* 2021
- NCI Award **R21CA248122** (De); Core on NCI Award **P01CA250957** (De); NCI awards **U24CA248453** and **U24CA264027** (Raphael)

IMPACT: Contributed to development of single cell data analysis tools to bridge the gap between single-cell and spatial transcriptomics and to elucidate the convergent evolution course of breast cancer

Innovative Pilot Projects: Selected Examples



Zheng
(CP)



Spencer
(former CIPT)

Translational: Co-Targeting mTOR and AR in Hepatocellular Carcinoma

- Publications: *Drug Discov Today* 2021; *Cancer Res* 2021; *Hepatology* 2022; *Theranostics* 2022
- NCI Award **R01CA260006** (Zheng)
- Trainee mentorship



Farris
(CPC)



Leyro
(CPC)

CPC Collaboration Pilot: Development of a Puff Topography Biofeedback Paradigm to Reduce Smoking Reinforcement

- NIH award **R21DA052723**



PI White
(CMI)



Anthony
(CMI)



J. Guo
(CMI)



Jacinto
(CMI)



Herranz
(CP)



Zong
(CMI)

Multi-project Award: Modulation of Nutrient Utilization Between Tumor and Host

- \$25 M NCI/CRUK Cancer Grand Challenges Award
 - 14 institutions across US and UK
 - Leverages Consortium
 - CA priorities and bidirectional communication with community via patient advocates

Engagement in Collaborative Cancer Research



Brittany S. Adamson
(GICG)



Jian Cao
(CMI)



Monica D'Arcy
(CPC)



Shawn M. Davidson
(CMI)



Ollie Ganz
(CPC)



Login S. George
(CPC)



Michelle Jeong
(CPC)



Denalee M. O'Malley
(CPC)



Kyle Payne
(CMI)



Yuri Pritykin
(CMI)



Alexander J. Valvezan
(CMI)



Martin Wuhr
(CP)

Member Recruitment Impact

\$500 K

CCSG Funding

\$50 K

Institutional /
Philanthropic
Support

Twelve

Strategic
Recruitments

One

URG Recruit

Five

Female
Members

Four

Princeton University
Members 

Strong ROI in Peer Reviewed, Cancer Focused Funding

\$6.9 M

Direct Costs

\$9.8 M

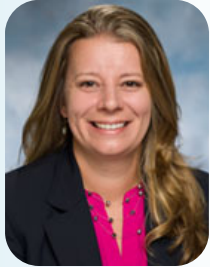
Total Costs

14:1

CCSG Funding ROI
(Direct Costs)

- Over 40 Publications
- 20 Trainees Mentored
- 10 Conduct Catchment Area Responsive Research
- Cancer Screening Clinical Trial Developed
- Patent Submitted
- Research contributed to FDA menthol ban
- Community Outreach and Bidirectional Communication

≡ New Investigators: Selected Examples



O'Malley (CPC)

- Mentorship of Trainees, Community Outreach
- Pending Clinical Trial
- Six Publications
- Successful Resubmission of NCI K99



Pritykin (CMI)

- Mentorship of trainees
- NIH New Innovator Award



Cao (CMI)

- Mentorship of trainees
- Publication: *Nat Commun* 2021
- NCI R01

≡ New Investigators: Selected Examples



Jeong (CPC)

- Mentorship of trainees
- Twelve Publications
- NCI award **K01CA242591**



Adamson (GICG)

- Patent filed January 11, 2022 (priority date of January 11, 2021)
- Two publications (including *Cell*)
- NIH award **R35GM138167**



Davidson (CMI)

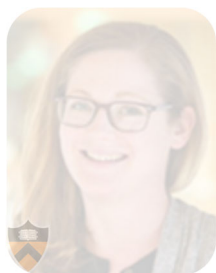
- Developed new imaging mass-spectrometry platform to perform spatial metabolomics and spatial flux measurements
- Performing experiments for the NCI/CRUK Cancer Grand Challenges collaborative using this enhanced technology

≡ New Member Highlight



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Future Plans

1 Support Research Program Priorities

- Enhance scientific expertise
- Promote innovative, collaborative, consortium-wide research

2 Create RFAs Around Strategic Scientific Goals

- Emerging and innovative research trends, e.g., immunology, precision medicine, health equity, clinical informatics
- Translational and multi-PI, e.g., SPOREs
- Responsive to catchment area priorities

3 Recruit New Members

- Investigator-initiated and National trial leaders
- Center-wide research initiatives to support team science
- Advance cancer-related research specific to URGs
- Enhance diversity of membership and leadership

Thank You

Q&A Segment



RUTGERS
Cancer Institute
of New Jersey
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