

# **NCI's Support of R21's**

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## How Should NCI Use the R21 Grant Mechanism?

- **What is the NIH definition of an R21 grant? How does it differ from an RO1 or RO3?**
- **How is NCI currently using the R21 grant mechanism?**
- **What is NCI's current level of support of R21 grants?**
- **What should be NCI's policies on R21 grants?**

# What is the NIH Definition of an R21 Grant?

## How Does It Differ from an R01 or R03?

<b>Mechanism</b>	<b>Research</b>	<b>Support Level</b>	<b>Duration</b>	<b>Restrictions</b>
<b>R21</b>	<b>Exploratory/developmental research projects</b>	<b>Up to \$275K DC <u>Total</u></b>	<b>2 years</b>	<b>Not renewable</b>
<b>R01</b>	<b>Discrete, specified research project</b>	<b>No specific dollar limit</b>	<b>3-5 years</b>	<b>Advance permission for \$500K DC/yr or more</b>
<b>R03</b>	<b>Feasibility studies, collection of preliminary data, small self-contained projects</b>	<b>Up to \$50,000DC per year</b>	<b>2 years</b>	<b>Not renewable</b>

# How Do NIH Institutes Solicit R21 Grant Applications?

- **NIH R21 Parent Announcement (Omnibus) PA-10-069**
  - **Participating NIH Institutes and Centers:**  
NCCAM, NEI, NHGRI, NHLBI, NIA, NIAAA, NIAID, NIAMS, NIBIB, NICHD, NIDA, NIDCD, NIDCR, NIDDK, NIEHS, NIMH, NINDS, NINR, and NLM
  - **Investigator Initiated**
- **Institute Specific Program Announcement**
  - **NIH Institutes and Centers that accept R21 applications only in response to their specific funding opportunity announcements:**  
FIC, **NCI**, NCMHD, NCRR and NIGMS
  - **Institute targeted area**

## How is NCI currently using the R21 grant mechanism?

- NCI does **not** accept unsolicited R21 grant applications
- NCI **only** accepts R21 grant applications that respond to specific NCI participating Funding Opportunity Announcements (PA's, PAR's, or RFA's)
- Some R21 grants' budgets and duration exceed the NIH definition; some have supported pilot or feasibility studies.
- NCI currently has 59 R21 Funding Opportunities Announcements
  - 34 are NCI initiated
  - 25 are NCI participating

## Current NCI Support of R21 Grants

<b>Mechanism</b>	<b># of Applications Submitted 2010 (2011)</b>	<b># Awarded (2010)</b>	<b>Total Funded (2010)</b>
<b>R21</b>	<b>2060 (2519)</b>	<b>229</b>	<b>592</b>
<b>R01</b>	<b>4874 (4952)</b>	<b>850</b>	<b>3998</b>

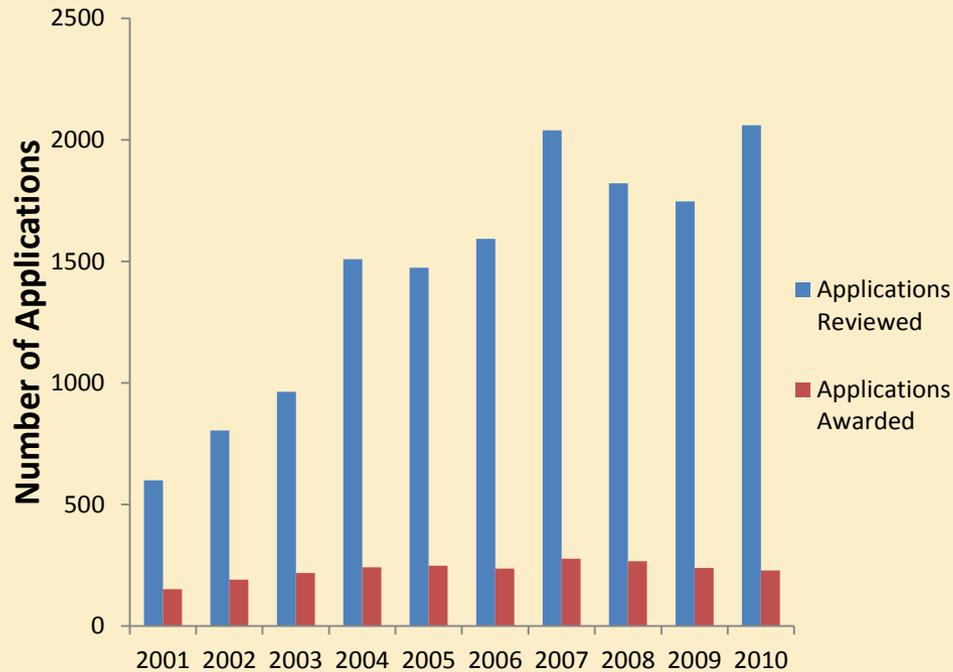
## Six PA's Receive Nearly Half of All R21 Grant Applications

1. **PA08-268** - Exploratory Studies In Cancer Detection, Diagnosis, And Prognosis (R21) **(260 Applications)**
2. **PAR08-025** - Quick-trials For Novel Cancer Therapies And Prevention: Exploratory Grants (R21) **(160 Applications)**
3. **PA08-165** - Stem Cells And Cancer (R21) **(158 Applications)**
4. **PA08-208** - Pilot Studies In Pancreatic Cancer (R21) **(140 Applications)**
5. **PA08-053** - Nanoscience And Nanotechnology In Biology And Medicine (R21) **(114 Applications)**
6. **PA09-130** - Exploratory Grants For Behavioral Research In Cancer Control (R21) **(113 Applications)**

# Success Rate of NCI R21 Applications in 2010

PA	# of applications submitted	% receiving score	# receiving 10% or better
PA08-267 - Exploratory Studies In Cancer Detection, Diagnosis, And Prognosis	260	49%	7%
PA08-165 - Stem Cells And Cancer	158	46%	6%
PA08-208 - Pilot Studies In Pancreatic Cancer	140	51%	9%
PA08-053 - Nanoscience And Nanotechnology In Biology And Medicine	114	56%	5%
PA09-130 - Exploratory Grants For Behavioral Research In Cancer Control	113	59%	4%
PAR08-025 - Quick-trials For Novel Cancer Therapies And Prevention: Exploratory Grants	160	52%	4%
<b>AVERAGES</b>		<b><u>52%</u></b>	<b><u>5.8%</u></b>
Research Project Grants (R01's)	4874	57%	10%

# Success Rates of NCI R21 Applications from 2001-2010

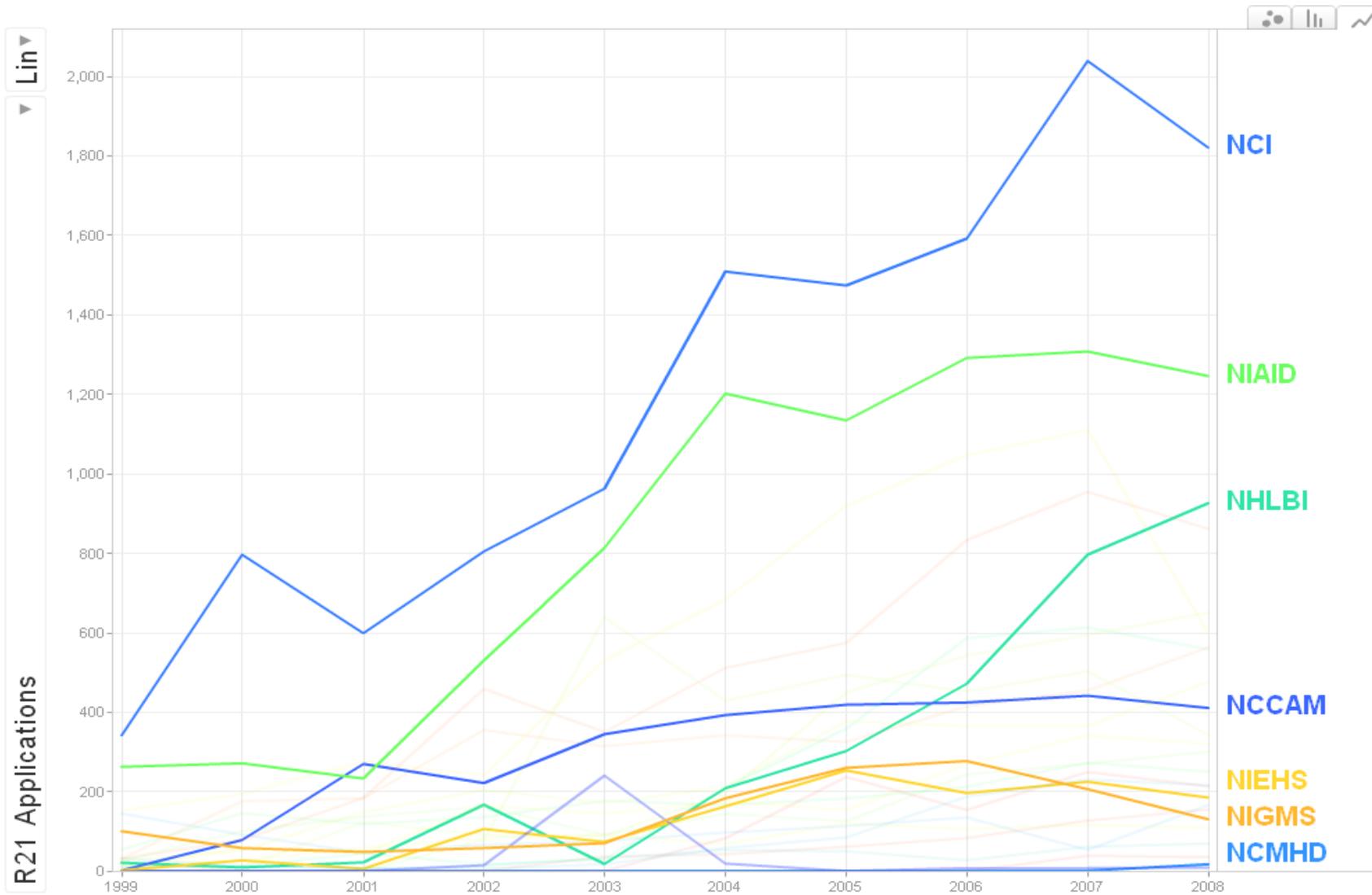


Fiscal Year	Number of Applications Submitted	Number of Applications Awarded	Success Rate <sup>2</sup>	Total Funding <sup>3</sup>
2001	599	152	25.4%	\$29,016,372
2002	804	191	23.8%	\$33,801,636
2003	963	219	22.7%	\$42,755,154
2004	1509	242	16.0%	\$42,069,312
2005	1474	249	16.9%	\$43,252,146
2006	1592	237	14.9%	\$43,664,296
2007	2039	277	13.6%	\$51,891,571
2008	1821	267	14.7%	\$56,443,487
2009	1747	239	13.7%	\$50,145,321
2010	2060	229	11.1%	\$48,159,879

## Questions for BSA

- **How should NCI use the R21 grant mechanism?**
  - **NCI specified research areas**
  - **Investigator initiated research areas**
  - **Both**
- **How should NCI solicit R21 grant applications?**
  - **Continue to issue topic-specific PA's**
    - **Limit number issued**
    - **Limit receipt dates**
  - **Issue an NCI Omnibus PA**
  - **Participate in the NIH Omnibus PA**

# R21's Applications Across the NIH



2003 Omnibus begins

2006 NHLBI joins Omnibus

# NCI issued R21 Funding Opportunities

Announcement Number	Related Announc.	Issuing Organization	Release Date	Opening Date (SF424 Only) ?	Expiration Date	Activity Code(s)	Title
<a href="#">PAR-11-216</a>	<a href="#">See Related</a>	NCI	05/24/2011	06/27/2011	03/14/2014	R21	Early Phase Clinical Trials in Imaging and Image-Guided Interventions (R21)
<a href="#">PA-11-159</a>	<a href="#">See Related</a>	NCI	03/17/2011	05/16/2011	05/08/2014	R21	Biomarkers of Infection-Associated Cancers (R21)
<a href="#">PA-11-161</a>	<a href="#">See Related</a>	NCI	03/17/2011	05/16/2011	05/08/2014	R21	Enhancing Tumoricidal Activity of Natural Killer (NK) Cells by Dietary Components for Cancer Prevention (R21)
<a href="#">PA-11-163</a>	<a href="#">See Related</a>	NCI	03/17/2011	05/16/2011	05/08/2014	R21	The Effect of Racial and Ethnic Discrimination/Bias on Health Care Delivery (R21)
<a href="#">PA-11-074</a>	<a href="#">See Related</a>	NCI	12/09/2010	01/16/2011	01/08/2014	R21	Mitochondria in Cancer Epidemiology, Detection, Diagnosis and Prognosis (R21)
<a href="#">PA-10-291</a>	<a href="#">See Related</a>	NCI	09/29/2010	12/07/2010	09/08/2013	R21	Research on Malignancies in the Context of HIV/AIDS (R21)
<a href="#">PA-10-088</a>	<a href="#">See Related</a>	NCI	03/17/2010	05/16/2010	05/08/2013	R21	Exploratory Cancer Prevention Studies Involving Molecular Targets for Bioactive Food Components (R21)
<a href="#">PA-10-053</a>	<a href="#">See Related</a>	NCI	12/10/2009	01/16/2010	01/08/2013	R21	School Nutrition and Physical Activity Policies, Obesogenic Behaviors and Weight Outcomes (R21)
<a href="#">PA-10-032</a>	<a href="#">See Related</a>	NCI	11/24/2009	01/16/2010	01/08/2013	R21	Epigenetic Approaches in Cancer Epidemiology (R21)
<a href="#">PA-10-026</a>	<a href="#">See Related</a>	NCI	11/16/2009	01/16/2010	01/08/2013	R21	Development, Application, and Evaluation of Prediction Models for Cancer Risk and Prognosis (R21)
<a href="#">PA-10-028</a>	<a href="#">See Related</a>	NCI	11/16/2009	01/16/2010	01/08/2013	R21	Obesity Policy Research: Evaluation and Measures (R21)
<a href="#">PA-09-238</a>	<a href="#">See Related</a>	NCI	07/22/2009	09/16/2009	09/08/2012	R21	Exfoliated Cells and Circulating DNA in Cancer Detection and Diagnosis (R21)
<a href="#">PAR-09-225</a>	<a href="#">See Related</a>	NCI	07/17/2009	09/16/2009	09/08/2012	R21	Improving Diet and Physical Activity Assessment (R21)
<a href="#">PA-09-235</a>	<a href="#">See Related</a>	NCI	07/15/2009	09/16/2009	09/08/2012	R21	Diet, Epigenetic Events, and Cancer Prevention (R21)
<a href="#">PAR-09-162</a>	<a href="#">See Related</a>	NCI	06/11/2009	09/23/2009	11/24/2011	R21	Exploratory Grant Award to Promote Workforce Diversity in Basic Cancer Research (R21)
<a href="#">PA-09-198</a>	<a href="#">See Related</a>	NCI	06/01/2009	09/16/2009	09/08/2012	R21	Biomarkers for Early Detection of Hematopoietic Malignancies (R21)
<a href="#">PA-09-200</a>	<a href="#">See Related</a>	NCI	06/01/2009	09/16/2009	09/08/2012	R21	Identifying Non-coding RNA Targets for Cancer Early Detection and Prevention (R21)
<a href="#">PA-09-167</a>	<a href="#">See Related</a>	NCI	04/17/2009	05/18/2009	05/08/2012	R21	Developmental Projects in Complementary Approaches to Cancer Care and Treatment (R21)
<a href="#">PAR-09-160</a>	<a href="#">See Related</a>	NCI	04/16/2009	05/23/2009	11/24/2011	R21	Exploratory/Developmental Grants Program for Basic Cancer Research in Cancer Health Disparities (R21)
<a href="#">PA-09-158</a>	<a href="#">See Related</a>	NCI	04/14/2009	05/16/2009	05/08/2012	R21	Developmental Research in Cancer Prognosis and Prediction (R21)
<a href="#">PA-09-149</a>	<a href="#">See Related</a>	NCI	04/08/2009	05/16/2009	05/08/2012	R21	Studies of Energy Balance and Cancer in Humans (R21)
<a href="#">PA-09-144</a>	<a href="#">See Related</a>	NCI	04/03/2009	05/16/2009	05/08/2012	R21	Cancer Surveillance Using Health Claims-based Data System (R21)
<a href="#">PA-09-130</a>	<a href="#">See Related</a>	NCI	03/13/2009	05/16/2009	05/08/2012	R21	Exploratory Grants for Behavioral Research in Cancer Control (R21)
<a href="#">PA-09-047</a>	<a href="#">See Related</a>	NCI	02/19/2009	05/16/2009	05/08/2012	R21	Testing Tobacco Products Promoted to Reduce Harm (R21)
<a href="#">PA-09-024</a>	<a href="#">See Related</a>	NCI	11/06/2008	01/16/2009	01/08/2012	R21	Erythropoiesis Stimulating Agents and Tumor Progression (R21)
<a href="#">PA-09-005</a>	<a href="#">See Related</a>	NCI	10/06/2008	01/16/2009	01/08/2012	R21	Understanding the Effects of Emerging Cellular, Molecular, and Genomic Technologies on Cancer Health Care Delivery (R21)
<a href="#">PA-08-267</a>	<a href="#">See Related</a>	NCI	09/23/2008	01/16/2009	09/08/2012	R21	Exploratory Studies in Cancer Detection, Diagnosis, and Prognosis (R21)
<a href="#">PA-08-244</a>	<a href="#">See Related</a>	NCI	08/19/2008	09/16/2008	09/08/2011	R21	Etiology, Prevention, and Treatment of Hepatocellular Carcinoma(R21)
<a href="#">PA-08-240</a>	<a href="#">See Related</a>	NCI	08/14/2008	09/16/2008	09/08/2011	R21	Impact of Health Communication Strategies on Dietary Behaviors (R21)
<a href="#">PA-08-221</a>	<a href="#">See Related</a>	NCI	07/30/2008	09/16/2008	09/08/2011	R21	Investigational Nutrigenetic Studies for Cancer Prevention (R21)
<a href="#">PA-08-208</a>	<a href="#">See Related</a>	NCI	07/18/2008	09/16/2008	09/08/2011	R21	Pilot studies in Pancreatic Cancer (R21)
<a href="#">PA-08-211</a>	<a href="#">See Related</a>	NCI	07/18/2008	09/16/2008	09/08/2011	R21	Diet-Induced Changes in Inflammation as Determinants of Colon Cancer (R21)
<a href="#">PA-08-193</a>	<a href="#">See Related</a>	NCI	07/03/2008	09/16/2008	09/08/2011	R21	Geographic and Contextual Influences on Energy Balance-Related Health Behaviors (R21)
<a href="#">PA-08-077</a>	<a href="#">See Related</a>	NCI	01/17/2008	01/17/2008	11/06/2011	R21	Research on the Economics of Diet, Activity and Energy Balance (R21)