Kentucky Biomedical Research Infrastructure Network

Program Coordinator: Bruce Mattingly, Ph.D., Morehead State University
A Kentucky BRIN-Award was received in 2001 as part of the NIH Institutional Development Award (IDeA) Program.

The IDeA Program contains 2 types of award (COBREs and INBREs) funded by National Institute of General Medical Sciences.

KBRIN is currently funded through the INBRE program until 2014.

A new 5 year (2014 – 2019) renewal application is pending.

Program Director: Nigel Cooper, Ph.D., University of Louisville School of Medicine.
**IDeA Networks of Biomedical Research Excellence (INBRE)** enhance biomedical research capacity, expand and strengthen the research capabilities of biomedical faculty, and provide access to biomedical resources for promising undergraduate students throughout the eligible states. INBRE supports a statewide system of institutions with a multidisciplinary, thematic scientific focus.

**Centers of Biomedical Research Excellence (COBRE)** augment and strengthen institutional biomedical research capabilities by expanding and developing biomedical faculty research capability through support of a multidisciplinary center, led by a peer-reviewed, NIH-funded investigator with expertise central to the theme of the grant proposal.
## FY2012:
### Top 5 States/Territories Receiving NIH Awards

<table>
<thead>
<tr>
<th>Rank</th>
<th>State/Territory</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>CALIFORNIA</td>
<td>$3.2 B</td>
</tr>
<tr>
<td>#2</td>
<td>MASSACHUSETTS</td>
<td>$2.2 B</td>
</tr>
<tr>
<td>#3</td>
<td>NEW YORK</td>
<td>$1.8 B</td>
</tr>
<tr>
<td>#4</td>
<td>PENNSYLVANIA</td>
<td>$1.3 B</td>
</tr>
<tr>
<td>#5</td>
<td>TEXAS</td>
<td>$1.0 B</td>
</tr>
<tr>
<td>#30</td>
<td>Kentucky</td>
<td>$138 M</td>
</tr>
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</table>

A statewide collaborative community
Hosted by the University of Louisville
<table>
<thead>
<tr>
<th>Amount</th>
<th>Programs/Projects</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 million</td>
<td>Administrative Core, Genomics Core, Bioinformatics Core, Applied Statistics Core, Pilot NGS Projects, Bioinformatics Summit</td>
<td>Research Intensive Institutions</td>
</tr>
<tr>
<td>$1.5 million</td>
<td>Developmental Research Programs, Support/Logistics, Workshops, Summer Student Programs, Small Genome Project, Pilot NGS Projects</td>
<td>Regional Comprehensive Institutions, Outreach Institutions</td>
</tr>
</tbody>
</table>
THE IDeA in KENTUCKY

RESOURCES

JUNIOR FACULTY

PILOT PROJECTS LEADING TO FEDERALLY COMPETITIVE INVESTIGATORS IN BIOMEDICAL RESEARCH

TWD FOR THE NEW ECONOMY

WELL-TRAINED STUDENTS

BUILD A BETTER PIPELINE.

INVESTIGATORS CONTRIBUTE TO HEALTH SCIENCES RESEARCH, EDUCATION AND HEALTH

SUSTAINABLE INFRASTRUCTURE
Major objectives:

I. Increase State’s research capacity for biomedical research

II. Enhance quality of the pipeline from undergraduate to advanced degrees in biomedical and health related sciences.

Provide undergraduate students with more opportunities for quality research experiences

Increase the number of undergraduate students interested in a career in biomedical research.
I. Research Capacity Building Strategies:

- Establish a committed network.
- Promote a theme – Functional Genomics.
- Build state-of-the-art core research facilities.
- Recruit and train junior research faculty.
- Facilitate collaborations between institutions.
- Develop a critical mass of independently funded investigators at each institution.
- Institutional commitments – release time, research space, etc.
- Developmental research funding.

Ultimate Goal: Build sustainable research infrastructure
Research Support Program Evolution

KBRIN 2001 – 2004:
- 13 PUI colleges and universities
- Major research grants (~$50K)
- Faculty Summer Fellowships (~$10K)

INBRE1 2004-2009
- 4 regional state universities
- Major research grants (~$100K)
- Faculty Summer Fellowships (~$10K) – 2004 – 2005
- KBRIN-AREA Awards (Two Year, $12.5K/year), 2006-2009
- Post-Doc/Tech Support ($50K), 2007-2009

INBRE2 2009-2014
- Major Research Grants (Five year, $75K/year)
- KBRIN-AREA Awards (Two-Year, $25K/year)
- Post-Doc/Tech Support ($25K-$50K)
- Bridge Funding ($20K-$50K)
- Start-Up Awards ($25K+$25K match), 2012 - 2013
Recruitment Award Programs:
- Start-Up Award ($25K + $25K match)
- New Investigator Award ($75K + $25K match)

Sustainability Award Programs:
- Post-Doc/Tech Support ($25K-$50K)
- Bridge Funding ($20K-$50K)

Research Development Award Program:
- KBRIN-IDeA Awards (Two-Year, $40K/year)
Developmental Research Core

**Mentoring:**
- Scientific mentor
- Intensive NIH Grant Writing workshops
- Individual Proposal Reviews and Consultations
- Establish Metrics for Success
- Site visits

**Metrics/Expectations:**
- Must devote 50% effort to Research
- Institutional Commitment ~ cash match/release time/research facilities
- Must Involve Undergraduate Students
- Must submit an NIH grant each year
- Must publish a minimum of one research manuscript per year
NIH R15 – Academic Research Enhancement Awards (AREA)

AREA grants support research projects in the biomedical and behavioral sciences conducted by faculty and students in colleges/universities and health professional schools that have not received more than $6 million in NIH research grants in 4 out of the last 7 fiscal years.

The three goals of the AREA program are:

1. to support meritorious research,
2. to strengthen the research environment of the institution, and
3. to expose students to research.

Max. Award $300,000 for up to 3 years

The AREA or R15 grant is a research award and not a training award, so the focus is not on course work but on hands-on meritorious research.

See [http://grants.nih.gov/grants/funding/area.htm](http://grants.nih.gov/grants/funding/area.htm) for detailed information.
KBRIN Recruitment Awards

**Purpose:** to facilitate the recruitment of qualified junior faculty at Kentucky colleges and universities who have the background, training, and motivation to establish an externally-funded biomedical research program involving undergraduate students.

**Faculty Start-Up Awards:**
- One-year award
- $25,000 + $25,000 Institutional Match
- 25% release time required
- Must attend KBRIN R15 Grant writing Workshop
- Expected to apply for KBRIN-IDeA Award in first year

**Distinguished New Investigator Awards:**
- Two-year award
- $75,000/year + $25,000 institutional match
- 50% release time required
- Must attend KBRIN R15 workshop
- Must submit an NIH R15 proposal within first year
KBRIN Post-Doctoral Fellow Awards

Purpose: The purpose of this program is two-fold:

1) to enhance the productivity of the NIH-R15 funded faculty member during the award period by providing full-time management of the laboratory; and

2) to train and develop new Ph.D. investigators for faculty positions at PUIs.

Conditions and Awards:

- Must have an active NIH R15 grant
- Maximum award is $25,000 direct costs + F & A
- Post-doctoral salary must follow NIH compensation scale
- Maximum Post-Doc teaching is one-course per semester with institutional support
- Must have a career development plan in place
- PI must devote at least 50% effort to research
KBRIN Bridge Funding Award

Purpose
The purpose of this program is to enable NIH-funded faculty to maintain their research program for short periods of time between the lapse of initial grant funding and the start of a new or renewal NIH grant award.

Eligibility, Conditions and Awards:

- Must have an expiring NIH R15 grant and a renewal application pending or to be submitted shortly.
- The applicant must show evidence of research progress and meeting the expected KBRIN metrics (e.g., publications, grant proposals, etc).
- Must have at least 50% release time for research.
- Maximum award is $50,000 + F&A.
- Awards are for one year and are non-renewable.
KBRIN-IDEA (Investigator Development Award)

Purpose:
The objective of this program is to provide support to promising junior investigators to establish a research program involving undergraduate students that is competitive for NIH funding.

Eligibility:
- **Tenure-track and tenured faculty** at Kentucky Colleges and Universities eligible for NIH R15 funding may apply.
- Applicants **must contact an NIH institute Program Officer** and provide a statement confirming that the research topic area is potentially fundable by an NIH institute or center.
- Applicants **must have attended a KBRIN NIH R15 grant writing workshop**.
- Applicants **must identify a senior investigator** to serve as mentor/collaborator.
- Beyond the initial two-year award, renewal applications for an additional year of funding will be considered.
KBRIN-IDEA (Investigator Development Award)

Conditions:

• Institutions must grant the PI **50% release time** from teaching per academic year.

• PIs must **involve undergraduate students** in their research, monitor student progress, and provide tracking information to the KBRIN office.

• Applicants **must submit** an NIH-Academic Research Enhancement Award (AREA, R15) **grant proposal** prior to the conclusion of each grant period (annually for a two-year grant).

• Applicants are **expected to publish** a minimum of one research manuscript per year in a peer-reviewed PubMed journal.
Awards:

• Requests for funding may include expenses for supplies, equipment, use of core facilities, travel costs, summer salary, and undergraduate research assistants. Funds may also be requested to partially cover the cost of faculty release time (Buy-out; maximum $6000 annually)

• Initial awards are limited to a maximum of $40,000 per year in direct costs for up to two years ($80,000 total). The second year of funding is contingent upon research progress and continued NIH funding of the parent grant)

• Facilities and administrative (F&A) costs will be provided in addition to direct costs.
KBRIN-IDeA (Investigator Development Award)

Applications Guidelines:

• To facilitate the preparation of future NIH-AREA (R15) proposals, applications must be prepared following the instructions and format of NIH-AREA (R15) proposals using the PHS 398 research grant application instructions and forms.

Review Criteria:

• Standard NIH R15 review criteria (Significance, Innovation, Approach, Investigator, Environment) along with mentor/collaborator qualifications, student training opportunities, and institutional support.
KBRIN-IDeA (Investigator Development Award)

**Review Process:**
- Submission deadline: TBA, probably early December, 2014
- Application package submitted as a single PDF file
- Reviewers with NIH R01/R15 experience from multiple disciplines
- Written reviews and scores provided in NIH format

**Selection Process:**
- Proposals scored and discussed by review committee to obtain priority ranking
- Steering committee review and selection based upon ranks and funding available
- PI submits selected proposals to KBRIN External Advisory Committee for review and approval
- Approved proposals sent to NIGMS for administrative review
Progress and Outcomes
KBRIN-AREA (Academic Research Enhancement Awards)

• 2009 to 2013: Funding History

24 investigators from 6 institutions were funded for 2-4 years:

• WKU – 10
• NKU – 7
• EKU – 4
• MSU – 3
• MUR – 1
• UofL – 1

❖ Of 14 PIs who have completed two or more years of AREA funded research, 6 have been awarded NIH R15 grants

❖ 9 additional R15s from Major, Post-doc & Bridge fund awardees
KBRIN-IDeA (Investigator Development Award)

- 2014-15 Competition:
  - $480,000 available for Direct Costs
  - Four 2nd year non-competitive renewal grants approved
  - 17 proposals received from 5 regional universities
  - Reviewed by 10 independent reviewers with NIH expertise
  - Proposals were discussed and ranked
  - The top eight research proposals were funded:
    • Five new proposals
    • Three one-year competitive renewals

Total Awards for 2014-15 = 12

Four awards to WKU faculty
NIH R15 Grants Awarded at KY PUIs during BRIN, INBRE1, and INBRE2 Years
KY R15 Awards in the PUIs 2002-2013

- Non INBRE PI s: 5
- INBRE PI s: 27
<table>
<thead>
<tr>
<th>Faculty</th>
<th>Institution</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wesley White *</td>
<td>MSU</td>
<td>2002-06</td>
</tr>
<tr>
<td>Patrick Schultheis *</td>
<td>NKU</td>
<td>2002-05</td>
</tr>
<tr>
<td>Ilsun White</td>
<td>MSU</td>
<td>2003-07</td>
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<tr>
<td>Stephen Asmus</td>
<td>CEN</td>
<td>2004-07</td>
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<tr>
<td>Sterling Wright</td>
<td>MUR</td>
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<tr>
<td>Brian Cusato</td>
<td>CEN</td>
<td>2006-09</td>
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<tr>
<td>Rodney King</td>
<td>WKU</td>
<td>2007-11</td>
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<tr>
<td>Nancy Rice</td>
<td>WKU</td>
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<tr>
<td>Patrick Schultheis *</td>
<td>NKU</td>
<td>2007-10</td>
</tr>
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<td>Mark Bardgett *</td>
<td>NKU</td>
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<tr>
<td>Wesley White *</td>
<td>MSU</td>
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<tr>
<td>Sigrid Jacobshagen</td>
<td>WKU</td>
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<tr>
<td>Kevin Williams</td>
<td>WKU</td>
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<tr>
<td>Hazel Barton</td>
<td>NKU</td>
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<tr>
<td>Doug Dennis *</td>
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<td>Stephen Asmus</td>
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<td>Stefan Paula</td>
<td>NKU</td>
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<tr>
<td>Eimear Mullin</td>
<td>NKU</td>
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<tr>
<td>Janelle Hare</td>
<td>MSU</td>
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<td>Doug Dennis *</td>
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<tr>
<td>Alexey Arkov</td>
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<tr>
<td>Cecile Marczinski</td>
<td>NKU</td>
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<tr>
<td>Patrick Schultheis *</td>
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<tr>
<td>Kristi Haik/H. Bullen</td>
<td>NKU</td>
<td>2011-14</td>
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<tr>
<td>Mark Bardgett *</td>
<td>NKU</td>
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<tr>
<td>Rebekah Waikel</td>
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<td>Tanea Reed</td>
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<td>Wesley White *</td>
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<td>Chris Curren</td>
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<td>Janelle Hare*</td>
<td>MSU</td>
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<tr>
<td>Katy Carlson</td>
<td>MSU</td>
<td>2013-16</td>
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<tr>
<td>Stefan Paula*</td>
<td>NKU</td>
<td>2013-16</td>
</tr>
</tbody>
</table>

**Faculty Successes!**

47 awards including all universities

32 awards excluding the major research institutions

16 in last 5 years!

R15 Awards at KY PUls

* 7 PIs with multiple R15 hits

Nearly $10 million in total funding!
II. Student Development Strategies:

- Summer Research Experiences at Research Intensive Institutions
- Academic Year Research Assistantships at Regional Institutions
- Small Genome Project – Outreach Institutions ~ New at WKU

Ultimate Goal: Increased number of well-prepared students pursuing graduate and/or professional training in biomedical/health related sciences.
Increased Student Participation in Biomedical Research

**Institutional Outcomes**
- Increased emphasis on student research
- Institutional support for student research
- State-wide membership in Council for Undergraduate Research (CUR)
- Institutional Offices of Undergraduate Research
- Curricular changes emphasizing research
- Institutional Student Research Celebrations

**Student Outcomes**
- Increased research skills, training and confidence
- Increased student presentations/publications
- Increased students pursuing graduate and professional schools in biomedical sciences
- Skilled workforce
WKU KBRIN Contacts:

Dr. Cheryl Davis, KBRIN Lead Faculty

Current WKU Faculty who have received KBRIN funding:

- Claire Rinehart
- Sigrid Jacobshagen
- Rodney King
- Nancy Rice
- Michael Smith
- Di Wu
- Raja Dakshinamurthy
- Ajay Srivastava
- Noah Ashley
- Kim Soo Moon
- Nilesh Sharma
- Jill Maples
- Kevin Williams

- **2001-14 Total KBRIN Funding including F&A for WKU: $4,537,010**
- **2014-15 Total KBRIN Budget including F&A for WKU: $408,422**
NIH R15 Grant Writing Workshop
KAS – Lexington, KY
November 14th, 2014

Tentative Agenda:
9:00 am  Registration & Continental Breakfast
9:30 am  Welcome & Introduction – Nigel Cooper
9:45 am  Overview of NIH & Proposal Development Strategy – Bruce Mattingly
10:45 am Break
11:00 am Anatomy of an NIH R15 AREA Proposal – Scott Niles
12:00 pm Roundtable Lunch and Discussion
1:00 pm  Ingredients of a Successful NIH Proposal – Nigel Cooper
2:00 pm  Budget Development, Reviews & Revisions – Bruce Mattingly
3:00 pm  Break
3:15 pm  Panel Discussion – Recent R15 Recipients
4:15 pm  INBRE Resources & Future Directions – Nigel Cooper
4:30 pm  Adjournment
Detailed information on all of KBRIN grant programs may be found at:

http://louisville.edu/research/kbrin/
Questions?