NeuroDevNet: Opportunities in Brain Development Across Canada

Dan Goldowitz, Scientific Director

September 14, 2010
Developing Brain Understanding Brain Development

Challenges to the Developing Brain & Solutions

Prevention & Treatment
Measurement & Diagnosis
Knowledge Translation
Scientific Discovery

Neuroethics
Neuroinformatics

Improvement in Clinical Practice and Outcomes
Societal Change
Selection of Initial Research Projects

- Each disorder sheds light on the much larger spectrum of brain developmental disorders that affect Canadian children.
- Each disorder reflects roles of genes, environment, and GxE in brain function.
- Each disorder represents a significant socioeconomic burden to Canada.
- Our collective expertise across Canada will make major in-roads into understanding and treating each disorder.
- Three demonstration projects were selected (ASD, CP, and FASD) and an Opportunities Initiative.
Costs to Society

“When we fail to provide children with what they need to build a strong foundation for healthy and productive lives, we put our future prosperity and security at risk.”

(National Scientific Council on the Developing Child, 2007)
Overview of NeuroDevNet Infrastructure

**CAPACITY BUILDING**
Train the next generation of experts

- Support trainee exchange programs
- Conduct brain camps and co-sponsor workshops
- Offer trainee awards

**RESEARCH**
Support and conduct multidisciplinary research excellence

- Create a research network of experts across Canada
- Support research projects in CP, Autism, and FASD
- Support opportunity funds

**BUSINESS DEVELOPMENT**
Translate findings into diagnostic, preventative and therapeutic applications

- Develop partnerships with industry
- Placement of trainees with industry
- Provide projects start up funds for commercialization opportunities

**KNOWLEDGE TRANSLATION**
Raise awareness and disseminate findings to help with care delivery and policy decisions

- Plan and organize annual meeting
- Develop knowledge products and tools
- Expand relationships across disciplinary boundaries
Fetal Alcohol Spectrum Disorders: Gene-environment interactions; predictive biomarkers; and the relationship between structural alterations in the brain and functional outcomes
NeuroDevNet Initiative on FASD

Eye Tracking

Genetic Susceptibility

Fetal Alcohol Spectrum Disorder (FASD)

Brain Volumes

Cognition & Behaviour

Brain Connectivity

Animal studies

Cortical Thickness
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<th>Queen’s University</th>
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<tr>
<td>James Reynolds</td>
<td>Sterling Clarren</td>
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<td>Joanne Weinberg</td>
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<td>Doug Munoz</td>
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<td>Garth Smith</td>
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<td>Marie-Pierre Dube</td>
<td>Steve Scherer</td>
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www.neurodevnet.ca
NeuroDevNet Opportunities

TRAINING

INTERNSHIPS

WORKSHOPS

ANNUAL GENERAL MEETING

RESEARCH FUNDING (Opportunities Initiative)

KNOWLEDGE TRANSLATION and ADVOCACY
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**Patricia Fortin**, Knowledge Transfer

**Jennifer Parisi**, Communications