

Corinne
Young^{LLC}



DOE BETO Summit Future of the BioEconomy

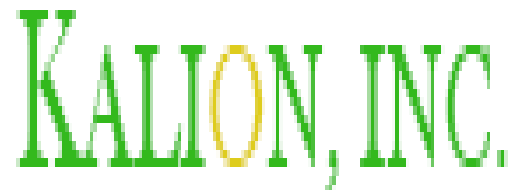
July 12, 2017

Integrity

Integrity In...

- Scientific & Technology Platforms
- Policy & Vision
- Funding Decisions & Project Management
- Financeability & Markets
- Representation & Messaging

Keeping It Real



Journey to Functionality

Addressable Markets



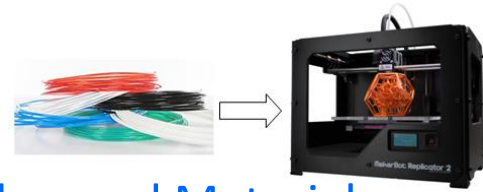
Single Use



Semi-durables



Durables



Advanced Materials
3D printing, PChem,
Complex Assembled
Goods



Yes....Biofuel Is a Bioproduct (Chemical Compound)

Need...Parity, Agnostic, Not Overly Prescriptive Policy

Access to Capital (Push)

- Grants
 - DOE (BETO, IBR, BRDI, AMO, VTO, BTO)
 - USDA (AGRI NIFA, BRDI, CAM), SBIRs
 - DOD
- Loan guarantees, credit enhancement
 - USDA (9003, B&I)
 - DOE
- Tax credits
 - PTC/ITC
 - R&D

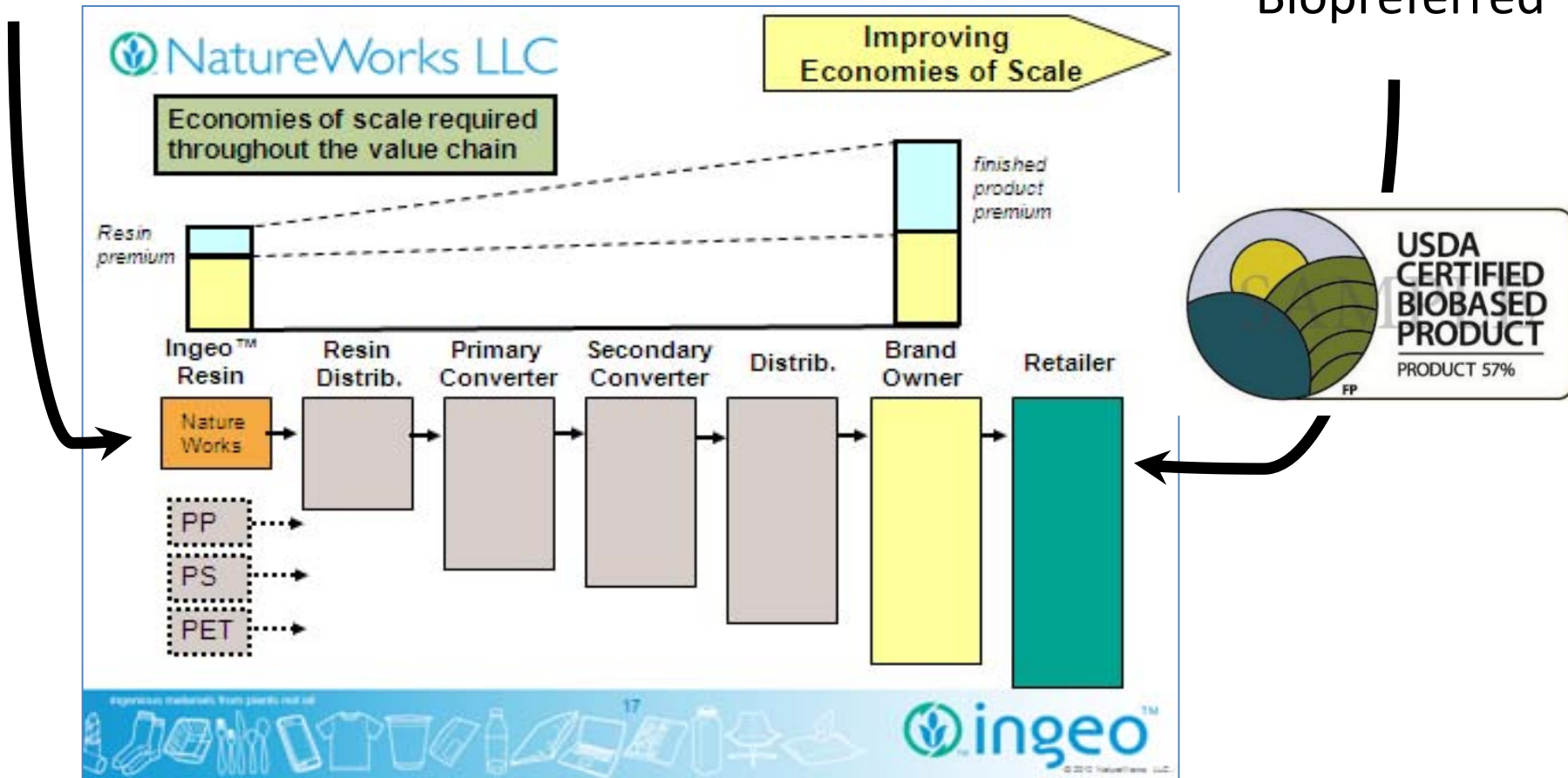
Speed to Market (Pull)

- Regulatory
 - TSCA
 - FDA
 - GMO
- Permits
 - Local
 - State
 - Federal (Title 5, NEPA)
- Preferential Programs
 - EPA (Green Chem/Safer Chemicals)
 - USDA Biopreferred
 - DOE (Energy Star, Green Building/LEED, CAFÉ/light weighting autos)
 - DOD (Green Fleet/Bases)

“Push-Pull” Model for BioEconomy

- Tax Policy

- USDA Biopreferred



Funding Decisions

Lead With Vision, End Goal in Mind

- Proposals are proposals
- Project execution, *supposed to change, iterative feedback loop, quality control, risk mitigation*
- It's hard, takes time, bottlenecks
- Failure – based on scientific integrity, including lessons learned – not execution failure (*insanity doing same thing over and over and expecting different results*)
- Need collaborations and consortia, with industry leading the way

Loose Gordion Knot:

US industrially available, mature feedstock value chains (Corn, Soy)
Renewable Chemicals/Bioproducts

Stop Drinking Cool-Aid, Dislodge False Entitlement

Just because we make it, no, they will not take it, finance it

- Return on Investment (ROI), Cost of Goods Produced (COGP), Techno-Economic Analysis (TEA)
- Go-to-market, addressable (innovation curve, specialty to commodity)
- Functionality, performance advantaged

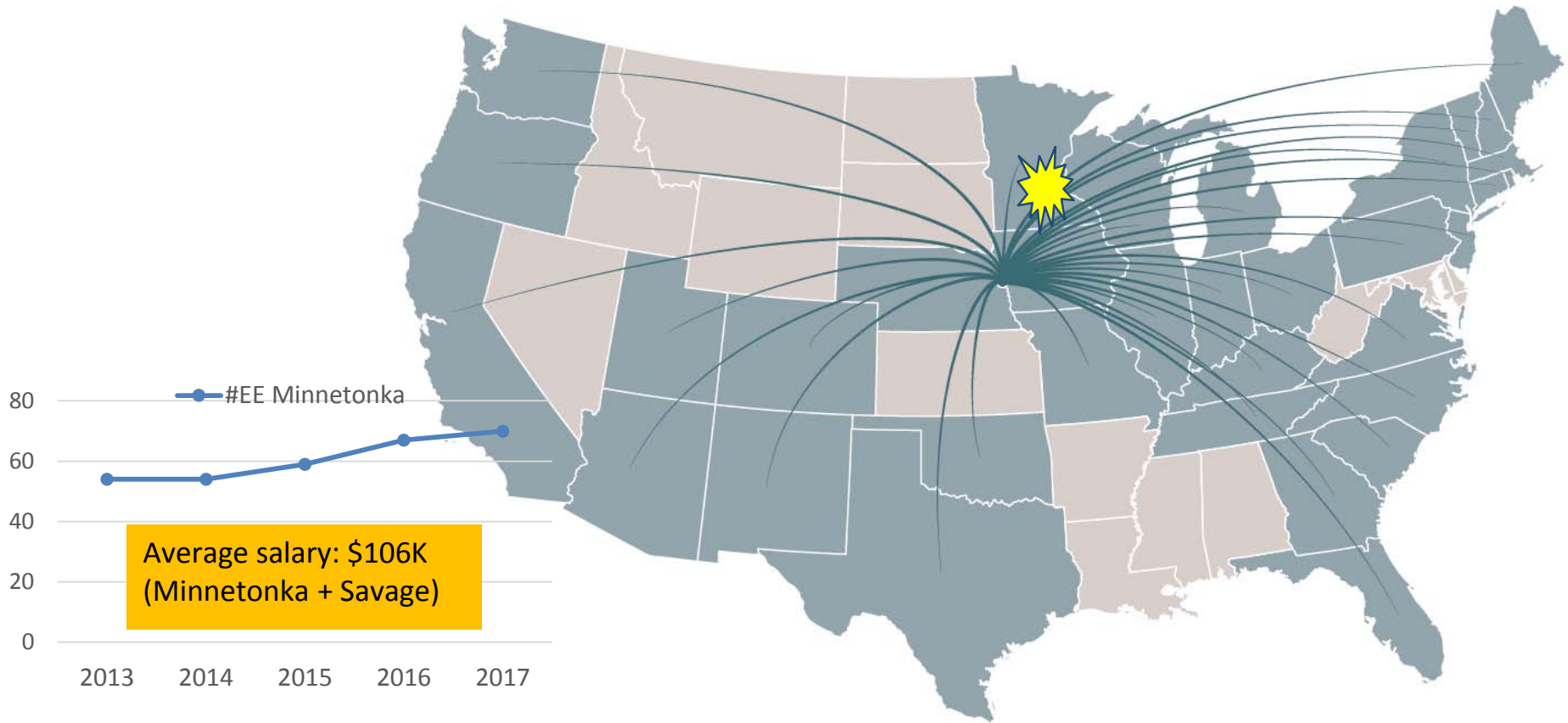
Result: **Project finance models, investment**

Representation & Messaging

- Making America great (global competitiveness)
- Jobs (high paying, family sustaining, careers)
- Investment (CapEx, Steel in Ground)
- Manufacturing renaissance (*We make stuff here, keep jobs, investment here*)
- Innovation (New Economy, leverage assets, increase profitability, efficiency)
- Us *With* Them (full value chain, up-down stream, non controversial, bi partisan)

Benefits Nationally

NatureWorks is *fueling* green jobs and innovation in the national bioeconomy



Manufacturers in 36 states produce products using Ingeo and retailers like Walmart & Target feature Ingeo packaging or products in all 50 states

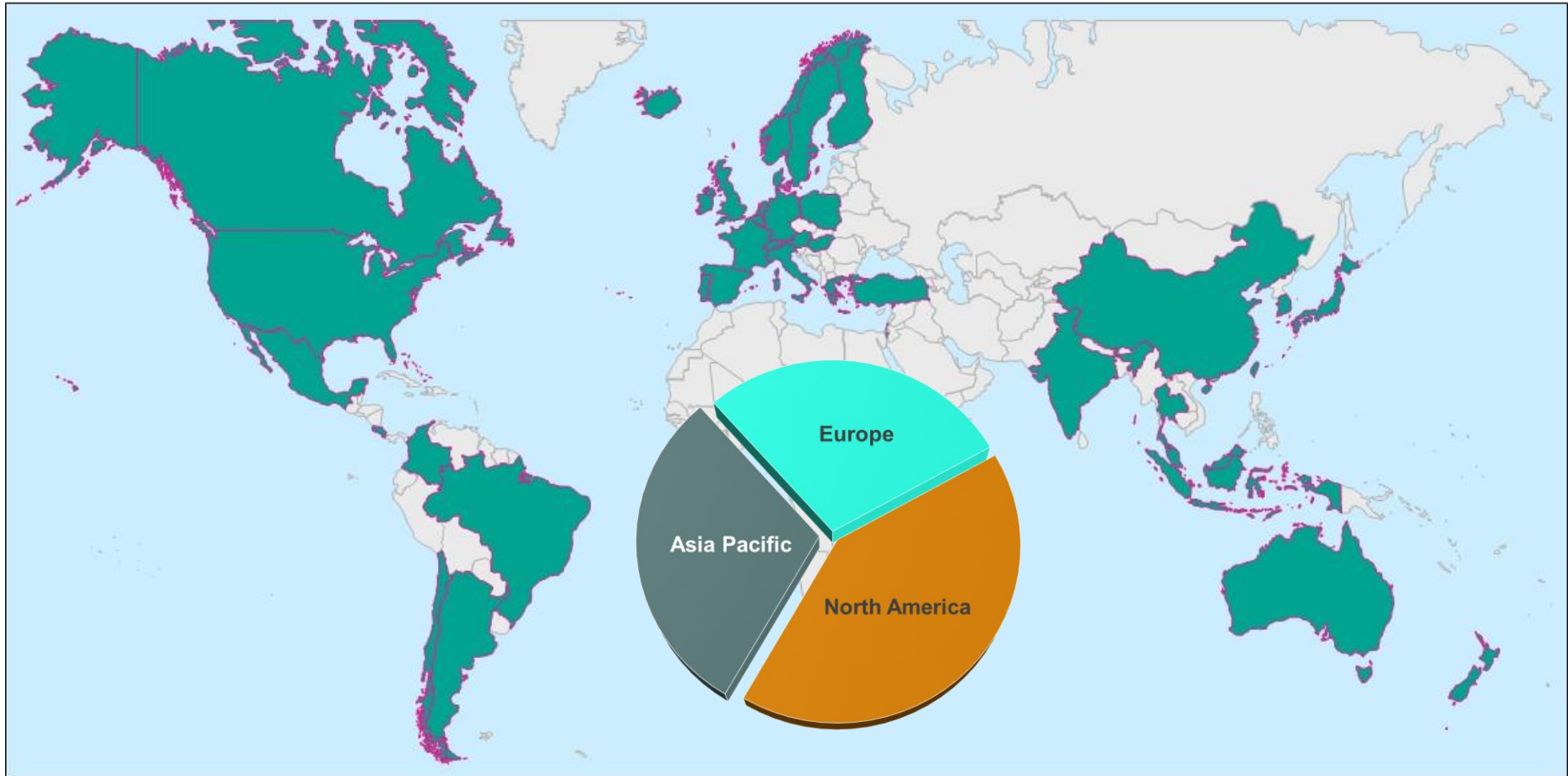
Benefits Locally



Minnesota

Where Are We Globally?

Export Benefits = Keeping/Making America Great



Eye of Storm

Blow Apart...or Blow Over



Future is...Ours

re:chem

Renewable Chemicals and Materials Alliance



Corinne
Young_{LLC}