



NC Food Innovation Lab

FY23 Annual Report



NCFIL



During FY23, the NC Food Innovation Lab (NCFIL) expanded our capacity with new equipment installations, additional staff and support from food industry collaborators. This has allowed us to meet our clients' needs as we experienced continued business growth during a challenging economic climate for plant-based food businesses.

Companies continue to seek out NCFIL as a resource:

- Professionally trained personnel
- Well-equipped labs and pilot plant
- Focus on consumer trends
- Food safety knowledge and standards

This report on FY23 provides information on how we work with clients and partners from several sectors. We look forward to continued success in FY24.

Bill Aimutis, Ph.D.
Executive Director





NCFIL

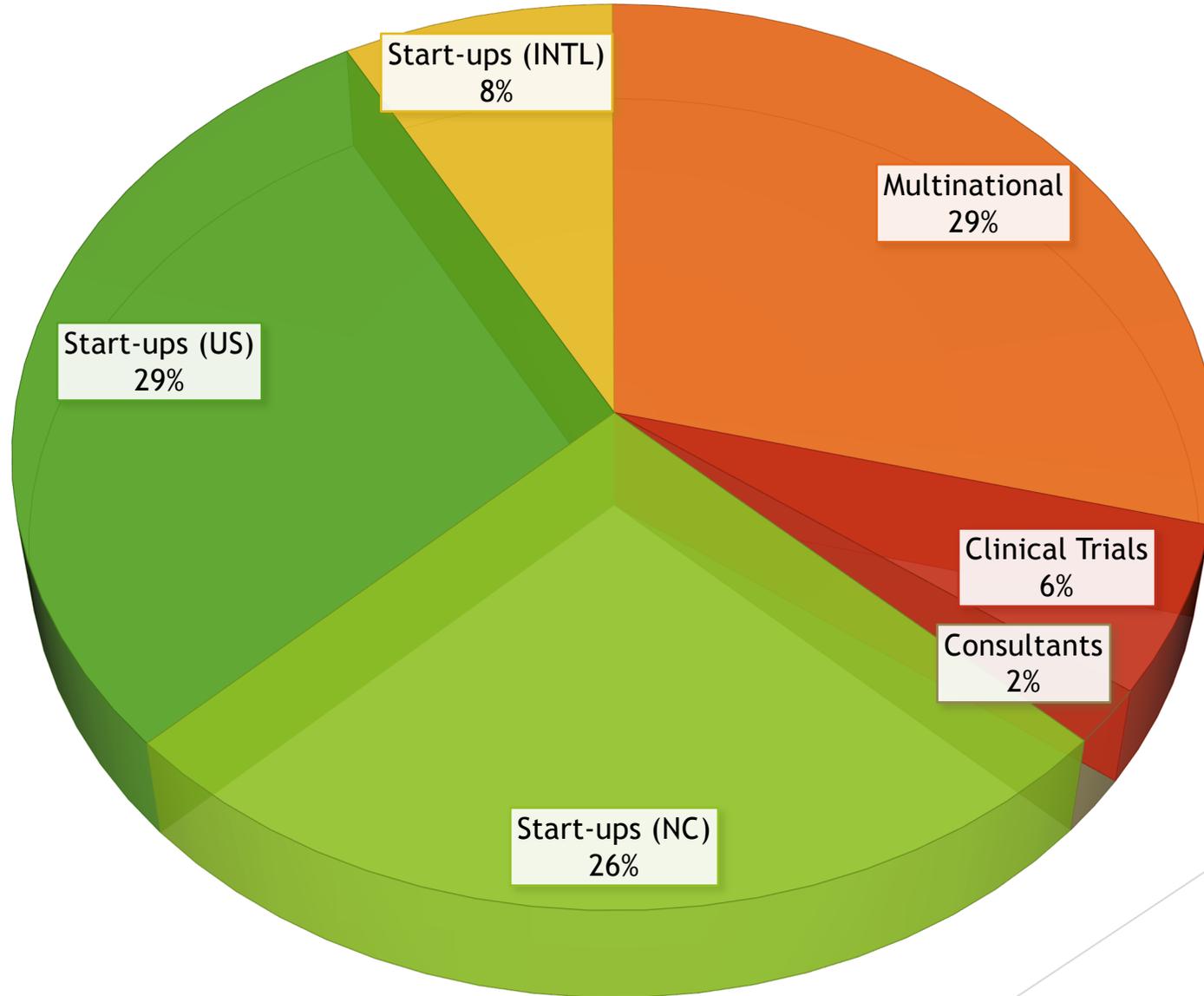
Vision + Mission

- ▶ **Vision:** To be a recognized leader for **economic enhancement** through the application of food technology in the **transformation of raw agricultural commodities to value-added products.**
- ▶ **Mission:** To produce a **collaborative environment** where academic scientists will partner with industry, entrepreneurs and government stakeholders to **accelerate plant-based food research, development and commercialization** in support of the entrepreneurial spirit within the state and enhance the direct **recruitment of food industry to North Carolina.**



NCFIL

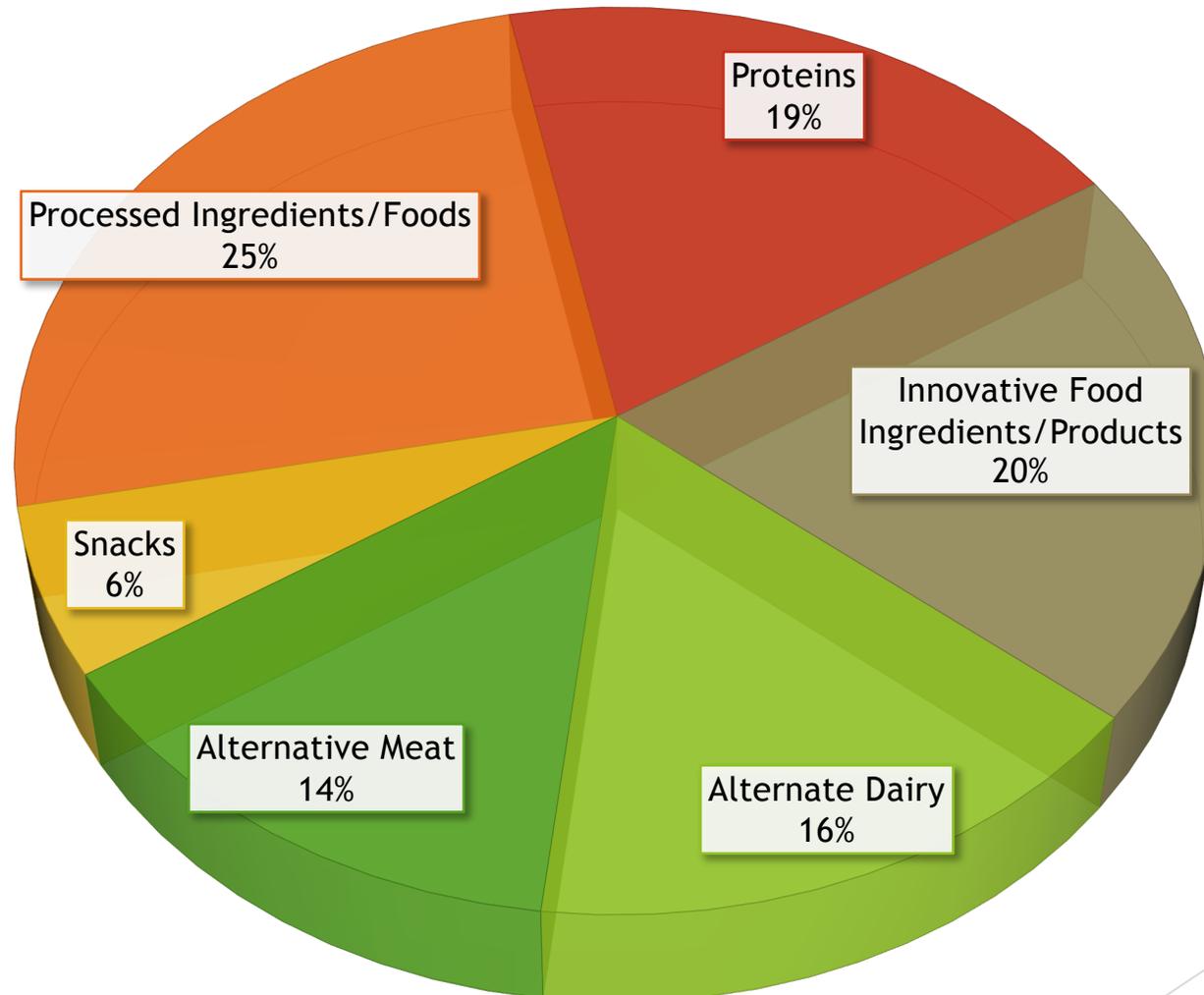
Who are our clients?





NCFIL

NCFIL Project Portfolio





NCFIL

Collaborations

Collaborations allow NCFIL to have a number of FTE's committed to one project and allow us to dedicate resources to **product development with novel ingredients**. In addition, it allows NCFIL staff to work with industry to learn about **market trends, technical service and customer acquisition**.



MIYOSHI OIL & FAT CO.,LTD.

NCFIL announced a collaboration with Miyoshi Oil & Fat Co. in March 2023. Miyoshi's leadership was particularly impressed with three aspects of NCFIL: the state-of-the-art equipment and the expansive market intelligence and contacts; and the lab's capability as a "one-stop shop."

Two additional confidential collaborations were created in FY23.

Industry Partners





Industry Partners

Why are NCFIL industry partners important?

Partners are companies that:

- ▶ Donate funds and/or product
- ▶ Provide expertise to assist NCFIL staff as they work with clients to develop new products
- ▶ Help us meet needs of our clients and formulate new products that create a unique sensory experience and are desirable to domestic consumers

We are the eyes and ears for our partners for consumer trends in the US market and especially the southeast. Our team works closely with our clients to create and produce prototype products to increase their sales volumes and profitability.



NCFIL

Economic Development (NC)

**Engagement with EDPNC led to the creation of 1400 new jobs
(est. \$500M investment)**



**ECONOMIC
DEVELOPMENT
PARTNERSHIP of
NORTH CAROLINA**

Three large companies (one of which is Believer Meats in Wilson) and five new, small companies in addition to several workforce expansions in NCFIL affiliated companies.



NCFIL in the News

knowable MAGAZINE
FROM ANNUAL REVIEWS

FOOD & ENVIRONMENT

Opinion

What is the protein of the future?

OPINION: It's sustainable, nutritious and delicious. Scientists need to ramp up efforts to meet this urgent need.

By William R. Aimutis | 01.25.2023

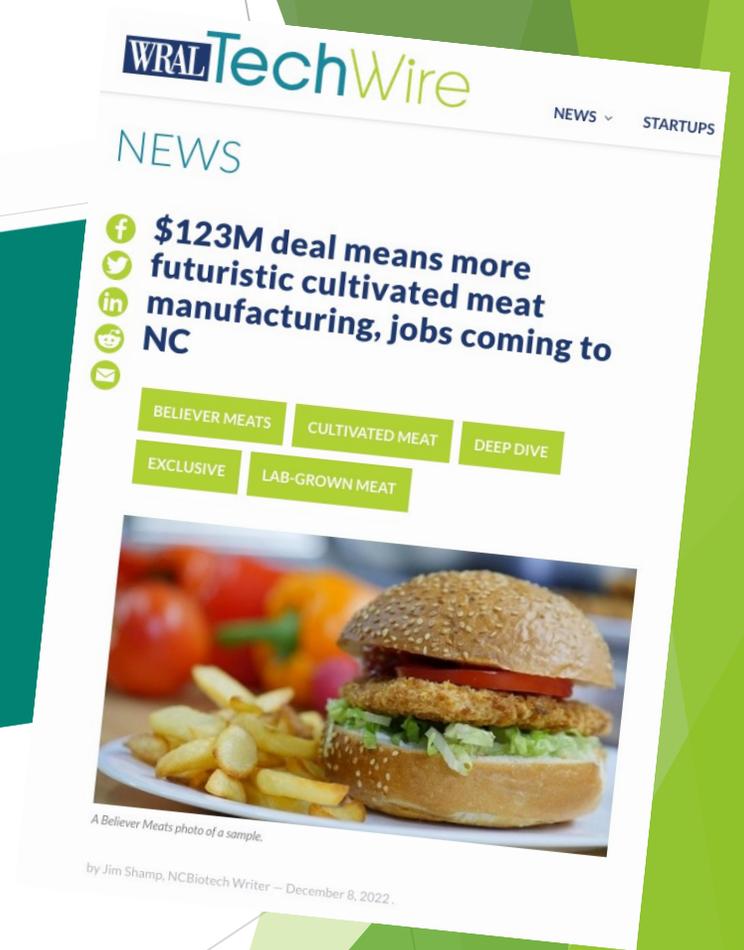
No Shortage of Plant-based Innovation: Bill Aimutis and Celia Homyak

December 22, 2022



Bookmark

**PLANTBASED
BUSINESS HOUR**





NCFIL

Clients, Tours and Interactions



- ▶ Total Clients: **105** (36% growth over FY23)
- ▶ Facility Tours: **64**
- ▶ Interactions: **142** total
 - ▶ North Carolina companies: **37**
 - ▶ National and International companies: **105**



Technology

Alternative Proteins

- ▶ 50% of NCFIL projects assisted with R&D associated with alternative proteins.
 - Characterizing new genetic varieties of plant based proteins
 - New novel food ingredients formulations
 - Extrudability of existing and new proteins, meat alternative products

Clinical Trials

- ▶ NCFIL interacted with four universities supporting clinical research projects
 - FDA inspected facility
 - Produce active ingredient and placebo products to be tested in clinical environments
 - Clinical tests – carotenoids and polyphenols



Technology

Patent Applications:

Two applications filed with NCFIL as Inventors – improving sensorial properties of beverages and bioactive peptides.

- ▶ These patent applications have not published yet.

Two patents issued:

- ▶ Modification and extrusion of proteins to manufacture moisture texturized protein. United States

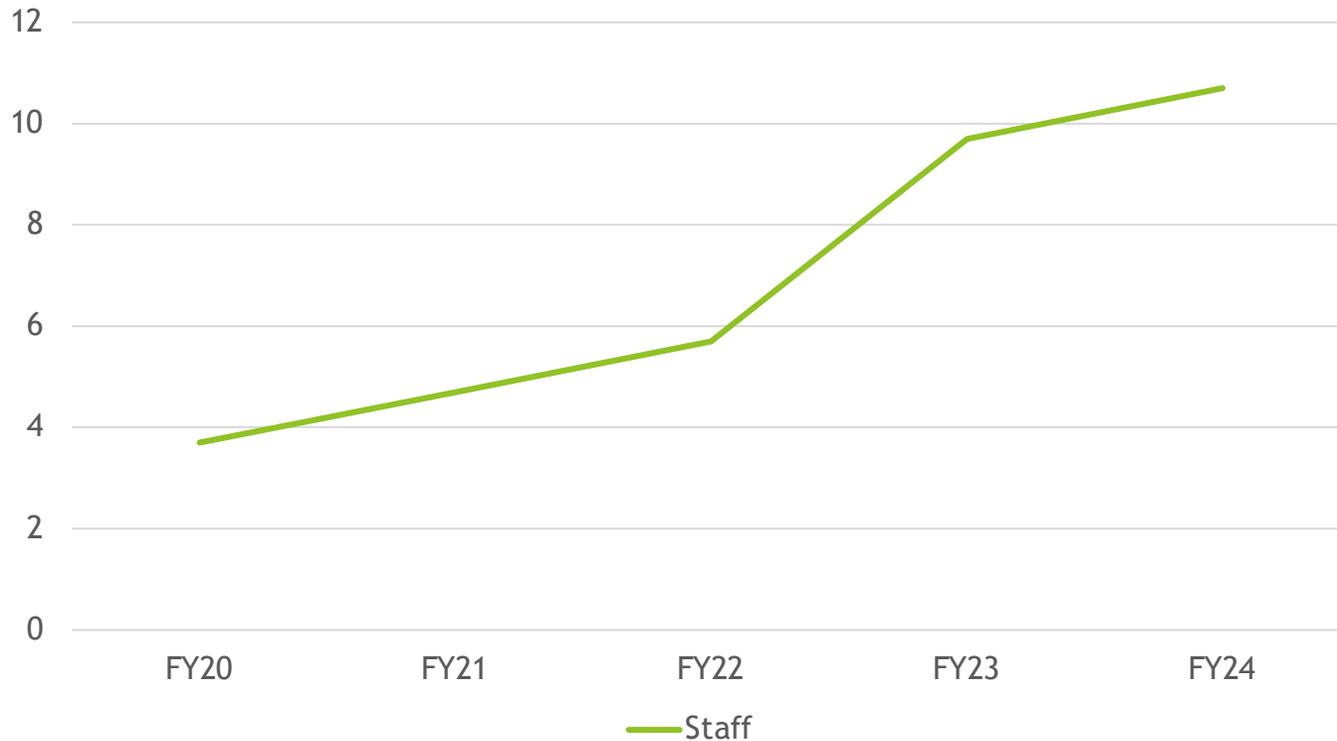
Patent No. 11,484,044 and No. 11,700,867



Staffing

Positions added:

- **Pilot Plant Operator: Andy Moritz**
- **Summer Interns: 4**



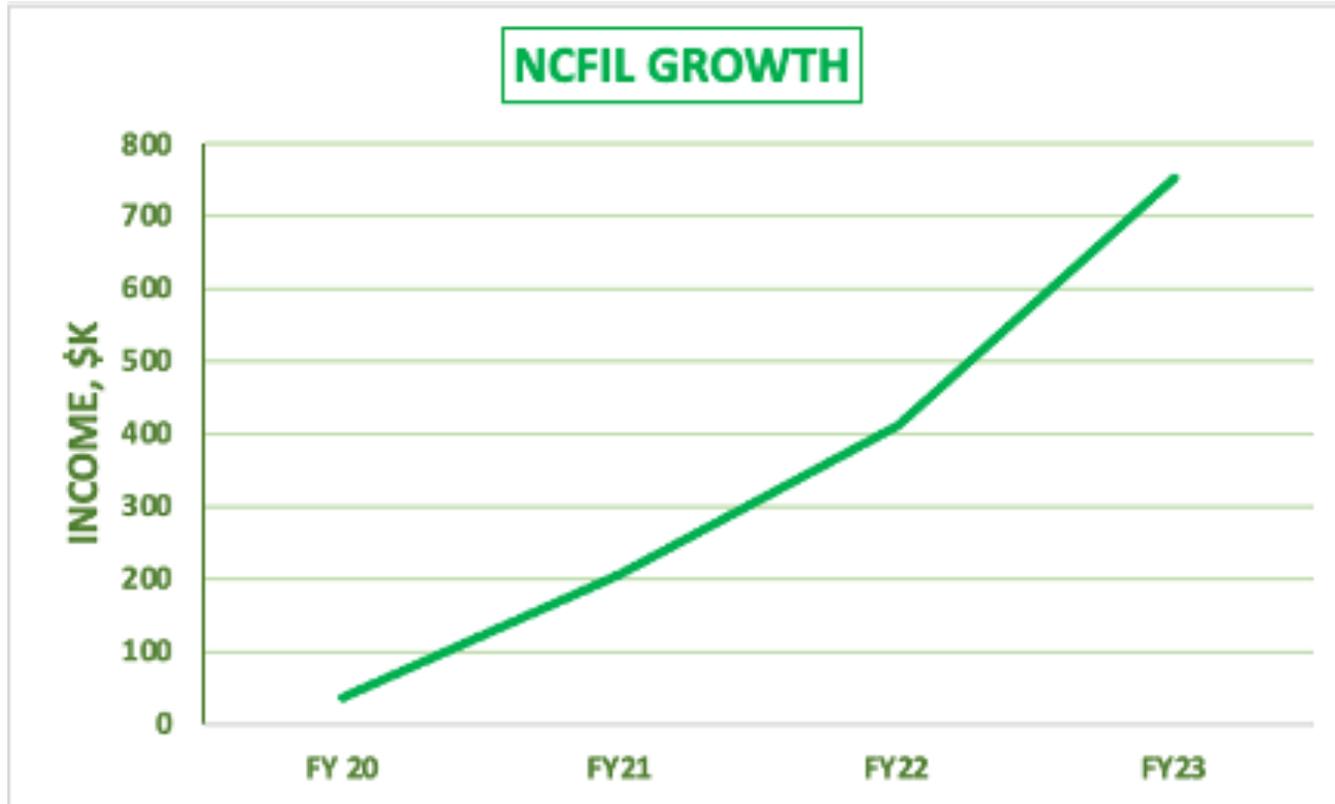


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Income and Growth

Income: \$754K (84% growth over FY22)

Entered FY24 with project commitments of \$429K



New Equipment



- ▶ **Alfa Laval Clara 20 Separator and Purifier** for liquid:solids separation
- ▶ •**Bühler SnackFix Line** to manufacture nutrition bars
- ▶ •**Netzsch Lab Compact Plus Air Classifier Mill** to concentrate proteins and other fractions from grains and seeds
- ▶ •**CPE Systems Plate Heat Exchanger**
- ▶ •**SLSY Grain Mill/Grinder**



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Give to NCFIL

Location

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