scipher
MEDICINE ™

# Scipher team

**Paige Nardi**
Executive Director,
Market Access

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Head of Medical Affairs

# scipher / MEDICINE

**Company size:**
100+ employees

**Locations:**
→ Waltham, MA
→ Durham, NC

– Founded by world leaders in medicine and physics from Harvard, Northeastern, and Brigham and Women's Hospital

– Proprietary intellectual property licensed from Northeastern University

– Financials: Successful completion of series A, B and C funding

## August 2020

**PrismRA is launched**

A molecular signature test that identifies inadequate responders to TNFi therapy prior to rheumatoid arthritis treatment – helping patients instead begin a therapy more aligned to their unique biology

# Scipher future focus:
# Launching test across drug classes and autoimmune diseases

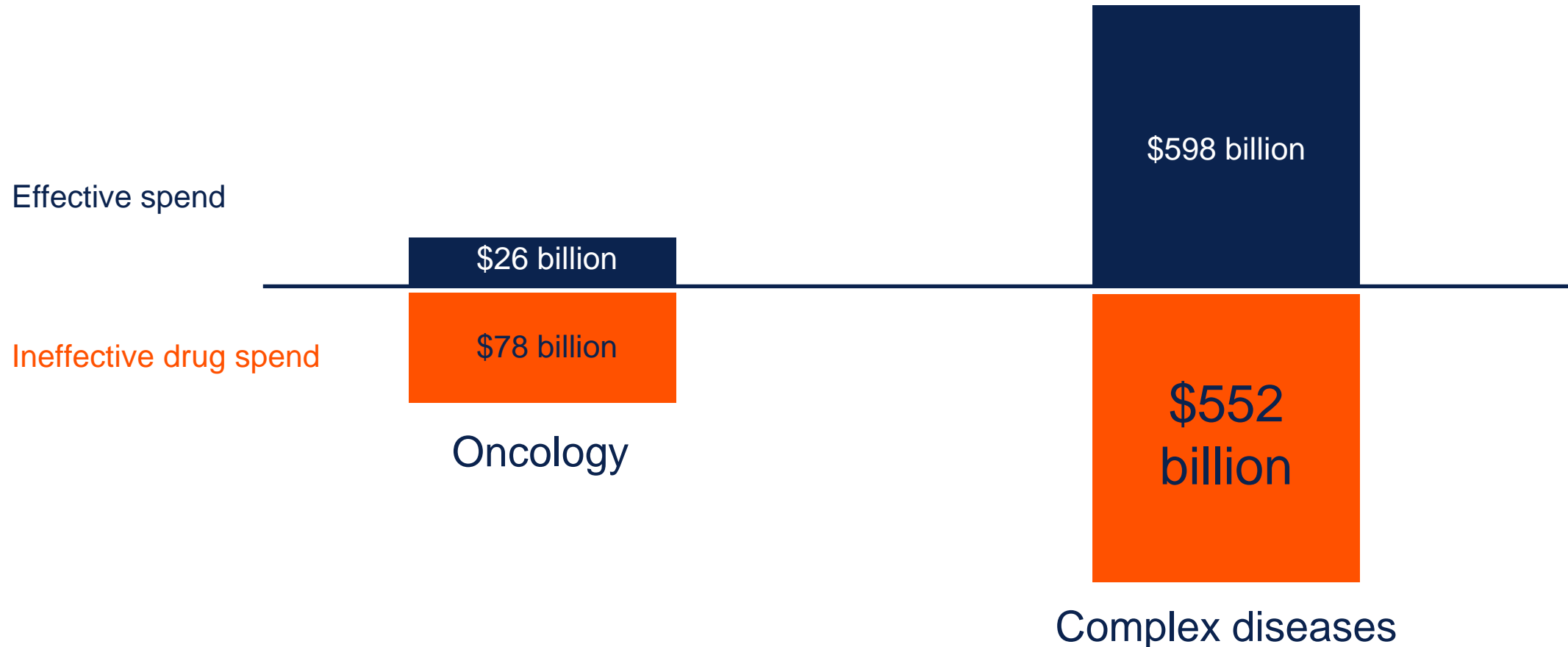PrismCD | Crohn's Disease

PrismMS | Multiple Sclerosis

PrismPS | Psoriatic arthritis/psoriasis

PrismUC | Ulcerative Colitis

PrismRA 2.0 (JAK) | Rheumatoid Arthritis

PrismRA (TNFi) | Rheumatoid Arthritis

# $552 billion in drug spend wasted in complex diseases every year



Effective spend

$26 billion

$598 billion

Ineffective drug spend

$78 billion

$552 billion

Oncology

Complex diseases

**10x larger problem in complex diseases compared to oncology**

# Drugs are failing most autoimmune disease patients

Tumor necrosis factor-α inhibitors (TNFi) therapy:
Humira®, Enbrel®, Remicade®, Cimzia®, Inflectra®, Simponi®, and Simponi Aria®

**$33B** annual sales of TNF inhibitor therapy, the world's largest selling drug class[1]

**2 in 3** biologic-naïve RA patients on TNF inhibitor therapy have an inadequate response to treatment[2]

**188%** increase in TNF inhibitor therapy spend from 2012 to 2019[3]

**0%** change in drug response rates[2]

1) Humphreys A. Top 200 medicines annual report 2019: the king of medicines. https://www.pharmalive.com/top-200-medicines-annual-report-2019-the-king-of-medicines. <accessed August 1, 2020>.
2) Package inserts from approved therapies.
3) Bowen K and Gleason PP. Prevalence and Cost of Autoimmune Specialty Drug Use by Indication in a 4.4 Million Member Commercially Insured Population. Prime Therapeutics LLC and Scipher internal analysis.

# PrismRA® Overview

# PrismRA® molecular signature response classifier test

**First** predictive laboratory test for the treatment of **rheumatoid arthritis**

→ Intended for use when starting or changing targeted RA therapies in patients

→ Next-generation sequencing test that uses a routine blood sample

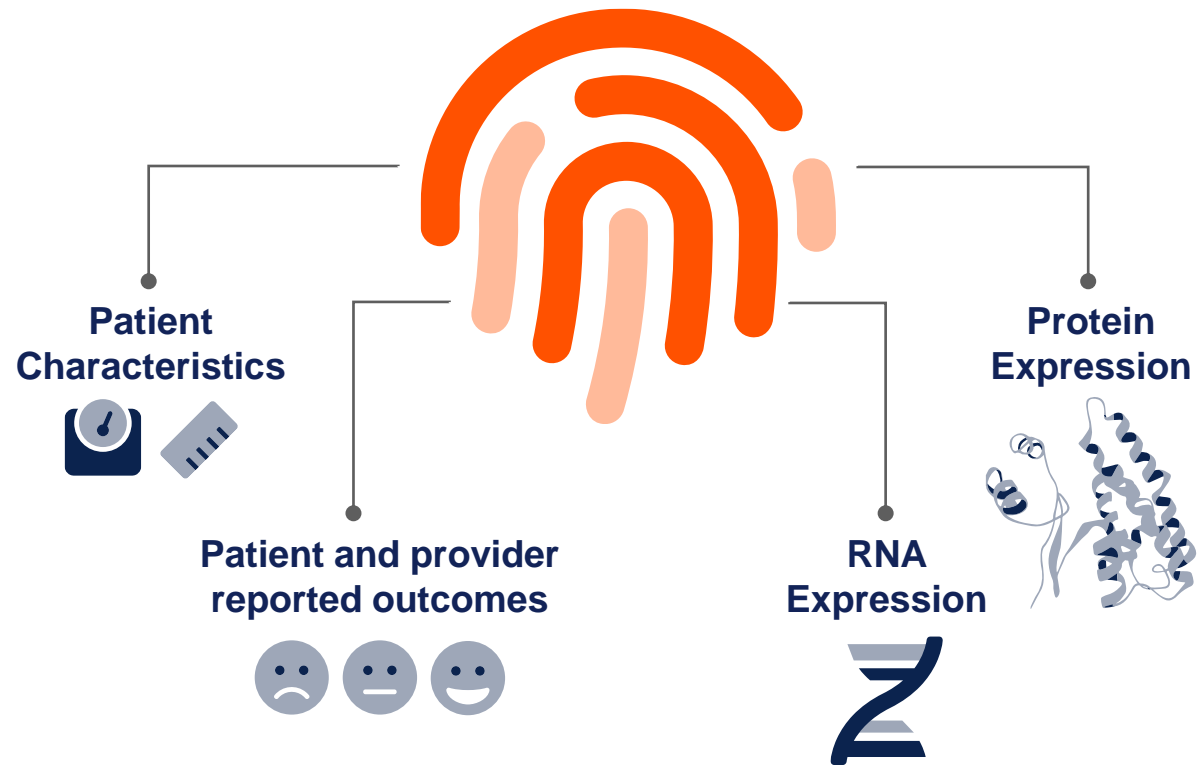→ Patient only needs test **once in lifetime** blood sample

**Molecular signatures are guided by genomic information**

### Like fingerprints, molecular signatures are unique.

They reveal how diseases affect each patient differently. A molecular signature combines a set of biological features to capture an individual's genetic makeup and disease behavior.[1-3] These features include RNA, proteins, and other features that reflect a patient's distinctive disease biology.
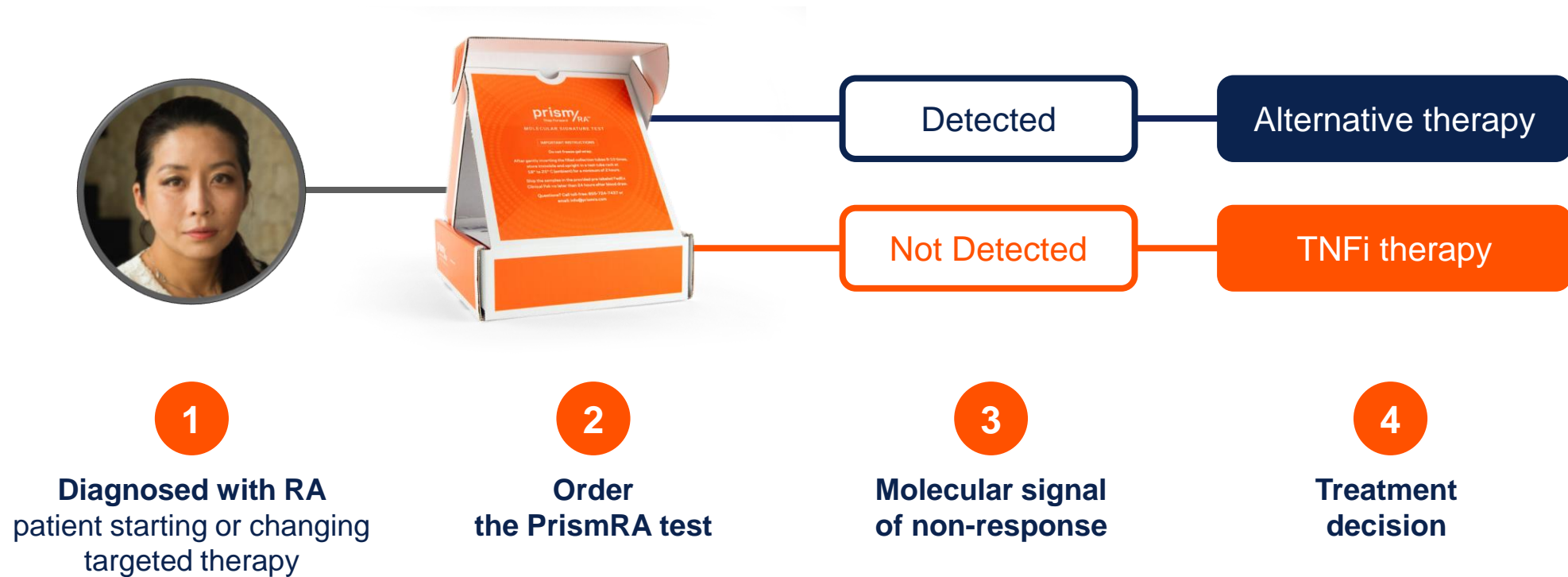
**Patient Characteristics**

**Patient and provider reported outcomes**

**RNA Expression**

**Protein Expression**

1) Mellors T, et al. Clinical validation of a blood-based predictive test for stratification of response to tumor necrosis factor inhibitor therapies in rheumatoid arthritis patients. Netw Syst Med. 2020; 3(1):91-104.

2) Roland T, et al. A proteome-scale map of the human interactome network. Cell 2014; 159:1212-26.

3) Ghiassian SD, Menche J, and Barabási AL. A DIseAse MOdule Detection (DIAMOnD) algorithm derived from a systematic analysis of connectivity patterns of disease proteins in the human interactome. PLoS Comput Biol 11(4):e1004120.

# For patients starting or changing targeted therapy

Incorporating PrismRA® into the clinical management of patients with RA can improve patient quality of life and save time by enabling providers to prescribe an effective therapy sooner



| | | | | Detected | | Alternative therapy |
| | | | | Not Detected | | TNFi therapy |

**1** Diagnosed with RA
patient starting or changing
targeted therapy

**2** Order
the PrismRA test

**3** Molecular signal
of non-response

**4** Treatment
decision

# PrismRA® results report

Higher scores indicate that the patient is less likely to respond to TNFi therapy

Result values and interpretation guide are highlighted for every result

Results are reported on a continuous, 25-point scale, divided into three tiers
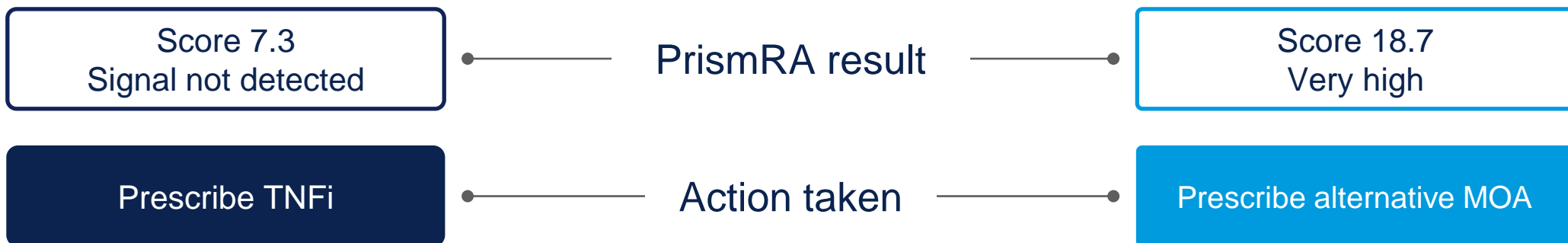
**YOUR PATIENT'S PrismRA® RESULTS**

Result Value:
**12.2**

Interpretation:
**High Non-Response**

PrismRA® result

<10.6          ≥10.6          ≥18.5

Likelihood of TNFi response

More likely                                    Less likely

1                                                        25

**YOUR PATIENT IS IN THIS CATEGORY**

Molecular signal of non-response not detected

PrismRA® result:
**12.2**

**HIGH non-response**

High likelihood of inadequate response to TNFi therapies

Unlikely to achieve low disease activity or remission with TNFi therapies

VERY HIGH non-response

# PrismRA® provides insights to inform treatment decisions

## Two female patients with similar clinical features

**PATIENT ASSESSMENT**

| | |
|---|---|
| Age: | 37 |
| Anti-CCP: | negative |
| Swollen joint count: | 4 |
| Tender joint count: | 8 |
| Physician global: | 40 |

**PATIENT ASSESSMENT**

| | |
|---|---|
| Age: | 41 |
| Anti-CCP: | negative |
| Swollen joint count: | 5 |
| Tender joint count: | 7 |
| Physician global: | 40 |

Traditionally both patients prescribed TNFi as first targeted DMARD

| Score 7.3 Signal not detected | PrismRA result | Score 18.7 Very high |
|---|---|---|
| Prescribe TNFi | Action taken | Prescribe alternative MOA |

Modeled from actual patients from validation study